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BDELLOID ROTIFERA OF SOUTH AFRICA.

By JAMES MURRAY, F.R.S.E.

(WITH PLATES I TO III.)

THE material for this paper was placed at my disposal through the kindness of the Director and Curators of the Transvaal Museum in Pretoria, Dr. Gunning and Messrs. J. Hewitt and T. Jenkins. Dry mosses from various parts of South Africa were sent to me from time to time during the year 1910. These I moistened and examined for Rotifera and other organisms. Some of the mosses were very productive, notably one sample from Pretoria; others yielded almost nothing.

The Bdelloida mentioned in this paper were obtained from four localities—Pretoria; Woodbush, in the North Transvaal; Pondoland, in the east, and Knysna, in the south of Cape Colony.

Previous knowledge of South African Bdelloida.—Very little has been written about the Bdelloida of South Africa. Ehrenberg in 1854 recorded two species for Cape Colony—*C. rediviva* and *C. hexaodon* (**12**)*. Thorpe in 1893 recorded *P. citrina* for the Cape of Good Hope (**36**). Kirkman in 1901 gave a list of seven species, but he was not confident about four of them (**16**). Rousselet in 1906 (**31**) summed up all that was known about South African Bdelloids, and included a list compiled by Mr. W. Milne, of Uitenhage, Cape Colony. His list numbers thirteen Bdelloids, but he omits the two species mentioned by Ehrenberg.

Mr. Milne has been working for some years at the Bdelloida of South Africa, but he has not to my knowledge published anything about them, except the list included in Mr. Rousselet's paper. He has found many species, and among them some very aberrant forms. He has been good enough to send me some moss, and among it I have found several of his peculiar species. We await the publication of his results expectantly.

---

* The figures in heavy type, enclosed in brackets, refer to the Bibliography at the end.

The Bdelloida of Central Africa are better known, and there are a number of early records for North Africa. At the end of this paper I propose to give a résumé of all that is known about African Bdelloids, and to compare the Bdelloid Fauna of South Africa with that of other parts.

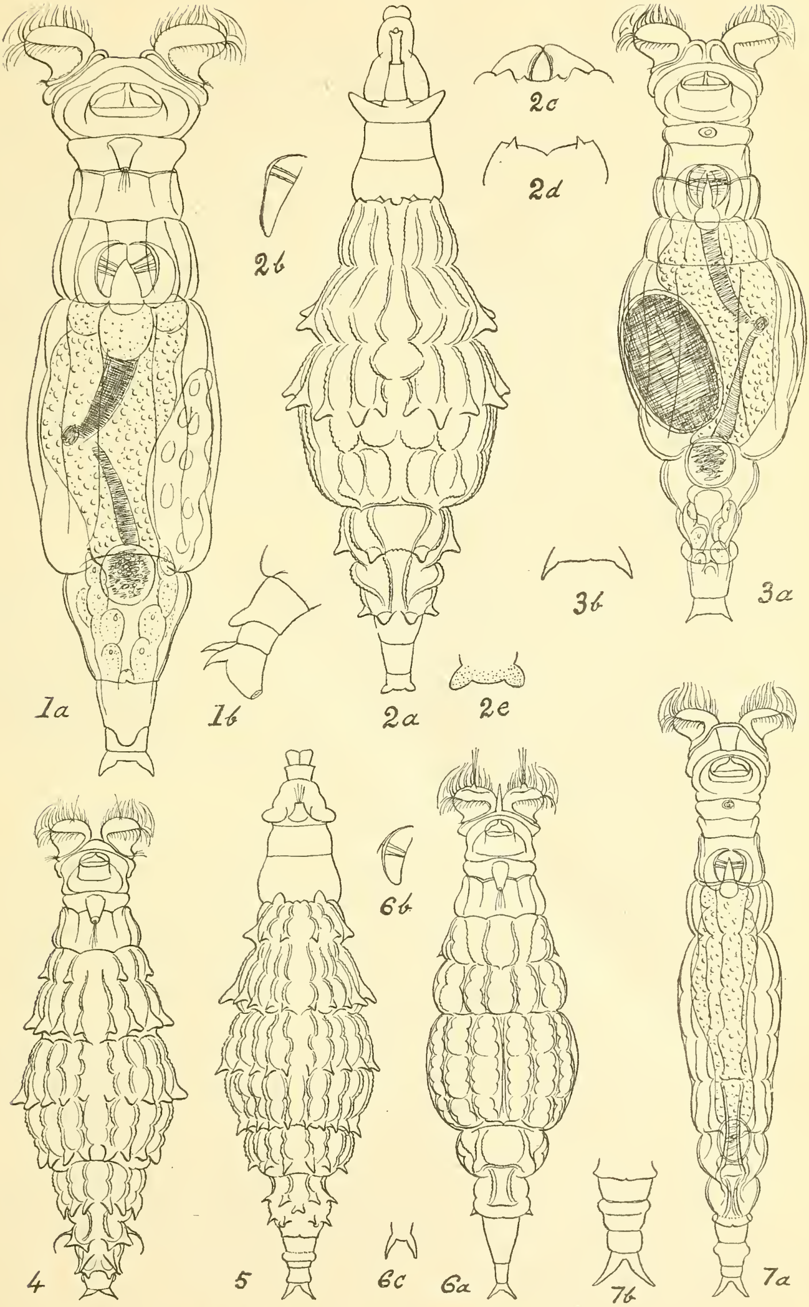
LIST OF SPECIES COLLECTED.

	TRANSVAAL.		CAPE COLONY.	
	Pretoria.	Woodbush.	Knysna.	Pondoland.
Philodina brevipes Murray			×	
P. flaviceps Bryce			×	
P. rugosa Bryce	×		×	
P. vorax (Janson)		×		
P. plena (Bryce)	×		×	
Pleuretra alpium (Ehr.)			×	
P. humerosa (Murray)			×	
P. africana, sp. n.	×			
Callidina habita Bryce	×			
C. formosa Murray				×
C. bullata, sp. n.				×
C. quadricornifera (Milne)				×
C. musculosa (Milne)			×	
C. gunningi, sp. n.	×			
C. hewitti, sp. n.	×			
C. plicata Bryce		×		
C. plicatula, sp. n.	×			
C. aculeata (Milne)	×		×	
C. multispinosa (Thomp.)	×	×		×
C. pinnigera Murray	×	×		×
Mniobia tetraodon (Ehr.)		×		
M. scabrosa Murray			×	
Rotifer vulgaris Schrank			×	
R. longirostris (Janson)	×	×		×
Habrotrocha eremita (Bryce)			×	
H. angusticollis (Murray)	×			
H. ampulla Murray	×			
H. longiceps (Murray)	×			×
H. perforata (Murray)	×	×		×
H. caudata Murray	×			
H. acornis Murray	×			
H. auriculata Murray		×		
H. constricta (Duj.)			×	
H. pulchra (Murray)		×		
H. aspera (Bryce)		×		
H. cucullata, sp. n.	×			
Adineta vaga (Davis)		×		
A. gracilis Janson	×			
A. longicornis Murray	×			
A. barbata Janson		×		

NOTES ON THE SPECIES.

Philodina brevipes Murray.—Two varieties occurred in Cape Colony—*first*, yellow, the trunk stippled, the spurs relatively smaller than in the type; *second*, trunk viscous, sordid with adherent matter, like that figured in "The Bdelloid Rotifera of the Forth Area" (22).

PLATE I.



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SOUTH AFRICAN BDELLOIDA.

Pleuretra alpium (Ehr.)—The type did not occur, but the small dull-coloured form which was noted in tropical Africa (**27**), and is known also in Australia and Hawaii.

Pleuretra africana, sp. n. (Plate I, figs. 2*a*–2*e*).—*Specific characters*: Large, brown; neck with two very large conical processes, on either side of the antenna; some minute spines on the anterior margin of the trunk; a dorsal series of ten warts crossing the central segments near the widest part; in front of these two lateral warts at each side; four spines on each of the two segments of what appears to be the rump; foot four-jointed; spurs very short and obtuse, separated by a wide interspace. Teeth two.

General description.—Length about 400μ. The antenna is long and stout. The conical processes on the neck are about 20μ in length. Though not in themselves mobile, they can be brought together as the animal contracts till they touch at the tips. The anterior margin of the trunk bears only a few tooth-like processes. The large furca which admits the antenna in most forms of *P. brycei* is reduced to very small dimensions, and would not hold the antenna. The ventro-lateral spines on the anterior margin are absent. The main dorsal row of ten knobs is as in nearly all forms of *P. brycei*, and the two lateral warts in front of the main row are common to many forms of that species.

The central trunk is nearly quadrate. Following it come two segments which appear to form the rump, but there is some reason to think that the first of these is really homologous with the fourth central of most Bdelloids, and that the second, which appears to be the anal, really consists of the anal and preanal, very much shortened. Each of the apparent segments of the rump bears four warts. The foot is relatively slender, the first joint long and bearing a small transverse dorsal ridge; the second joint very short; the spurs small.

The skin is stippled and wrinkled like that of *P. brycei*; even the spurs are dotted.

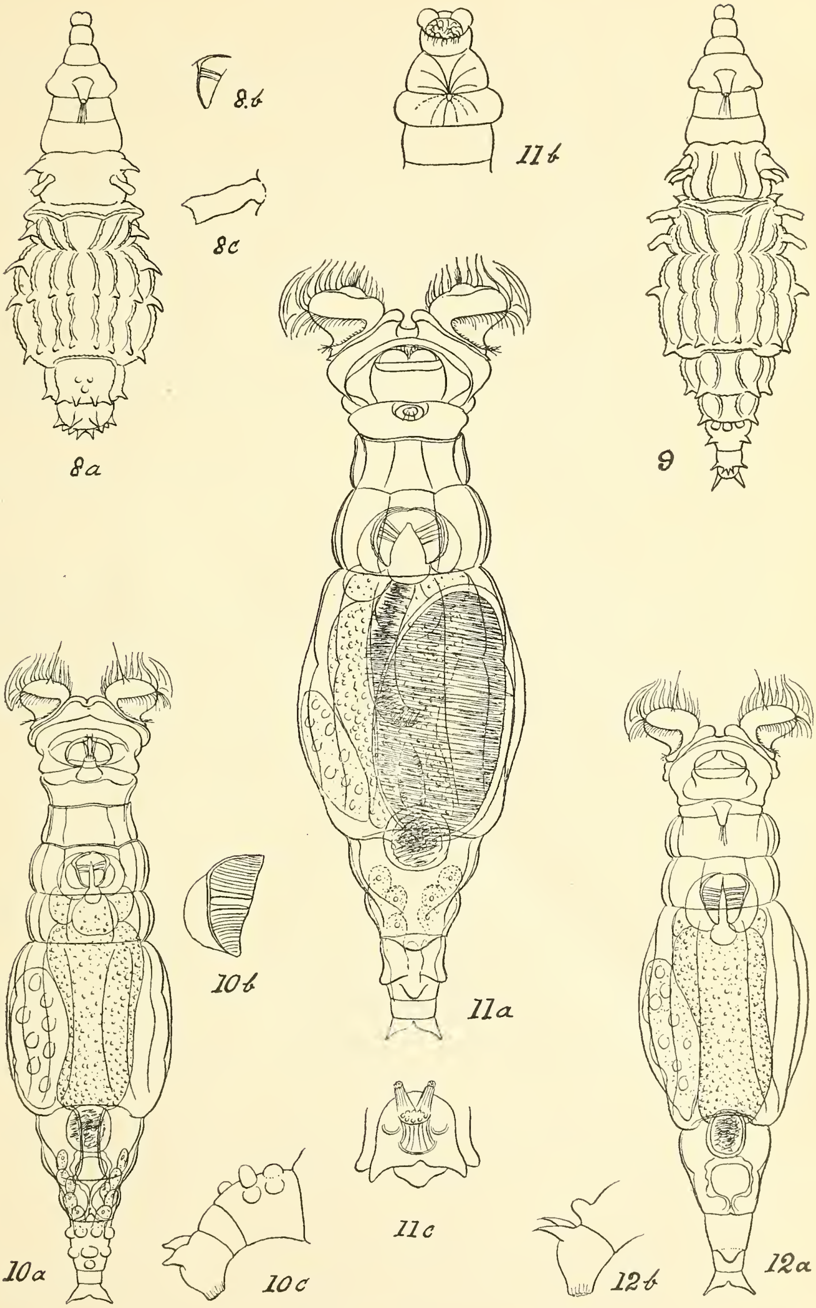
There is a very extensive series of forms, more or less closely resembling *P. brycei* Weber (**38**), and they are so linked together that it is very doubtful if any of them can be separated as distinct species, though each form appears to be fairly constant in the locality where it occurs. I believe they are genuine races, which may be regarded as species or not, according to the conception of species entertained.

Among all these forms which are known to me there is none which offers so many peculiarities as this one which I name *P. africana*, and I have judged it more useful to regard it as a distinct species than as a variety.

Whilst it is on the whole the best armed with spines of all the group, this is combined with the reduction or absence of some of the usual spines. Most of the forms have small rounded processes on the neck; in this they are developed into great thick cones, which give the animal a very unusual appearance in some positions.

The processes on the anterior margin of the trunk are greatly reduced, especially those nearest the dorsal middle line, which usually form a large furca for the antenna, and are themselves often furcate. There are none

Plate II.



J. Murray, del. ad nat.

South African Bdelloida.

on the ventral side of the anterior border, where there are usually at each side two characteristic spines, one of which points forward and the other backward.

The main row and the lateral spines on the central trunk are the only processes which are quite normal. All the forms known to me have ten spines in the main row, but Lord (**17**) says there are only eight in *C. cataracta*, and Weber figures only seven.

There is commonly one row, and sometimes two rows, of spines on the central trunk after the main row. This species has none of those. On the apparent preanal segment there are four warts, the dorsal pair of which correspond to those which are usually the last on the body.

The anal segment has also four knobs, which do not occur on any other known form.

The spurs differ from all the other forms. In most they are small and slender, with or without an interspace (Weber figures the type without) and are held almost parallel. *P. africana* has them very short and rounded, divergent, and with a wide interspace.

The characters of the spurs, and the great cones on the neck, were the features which chiefly decided me to separate *P. africana* from *P. brycei*.

Habitat.—Pretoria, collected by J. Hewitt; numerous.

Callidina habita Bryce (**4**).—Two varieties were noted, besides the type.

First (Plate I, figs. 1*a*–1*b*).—Large, differing from the type in three particulars—the corona is broader, and the lobes of the upper lip are widely separated by a straight interspace; the boss of the foot is quite at the end of the first segment of the foot, instead of a little way above the end; the spurs are separated by a broad straight interspace.

Second (Plate I, figs. 3*a*–3*b*).—smaller, head and upper lip as in the type, lobes meeting in median line; anal segment expanded at its end into a sort of thin flange; spurs very small, very widely separated by a straight interspace, with a minute nick in the median line. The foot appears to be only three-jointed. One example of this variety contained an elliptical thick-shelled egg, without the poles produced. It often swims free and rotates on its long axis. There is no foot-boss.

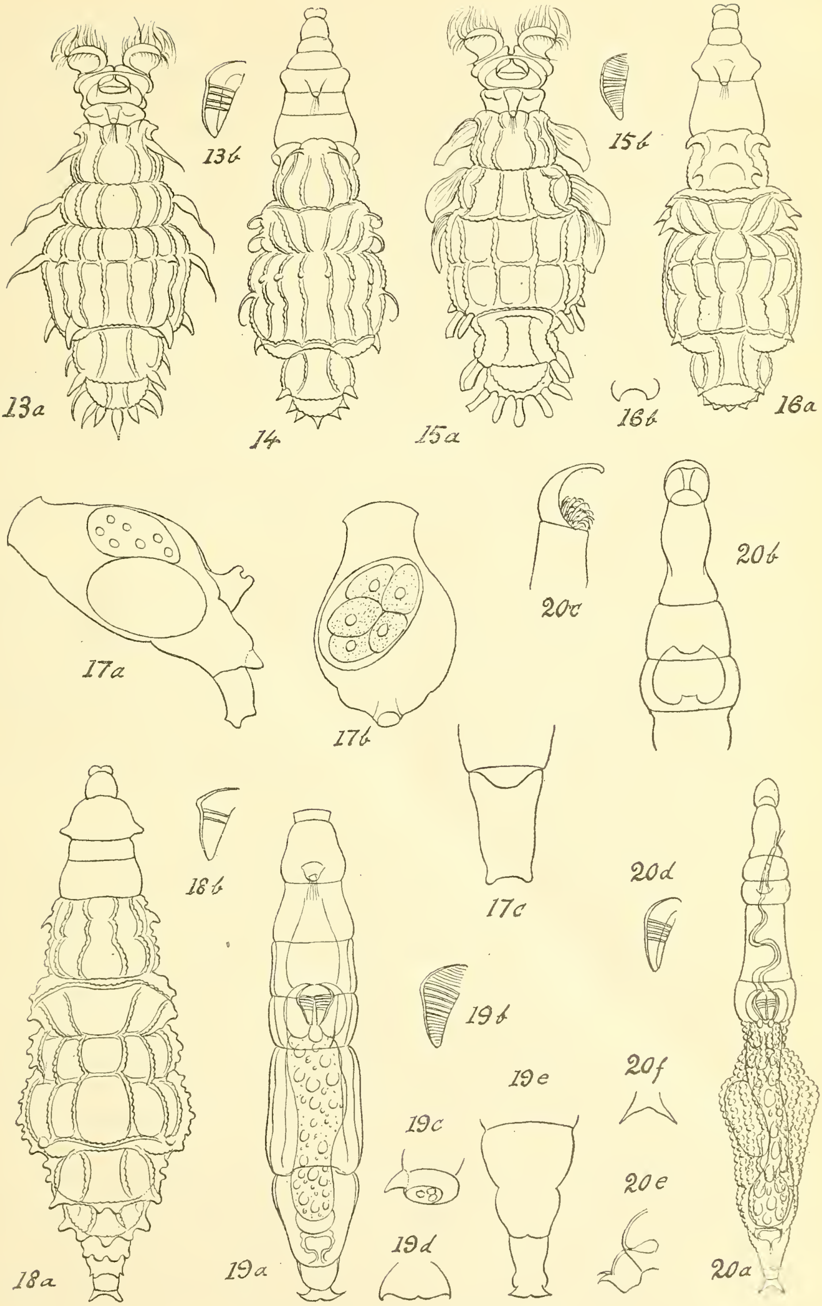
Very probably both of these are distinct species, but they are obviously very close to habita, and are united with it pending further study. *C. habita* is not a very variable species, but it is known to vary in the direction of having the lobes of the upper lip separated, the spurs separated, and the foot-boss obsolete.

C. formosa Murray (**24**).—This agreed with the form in tropical Africa in having the foot and anal segment smooth, and the papillae on the preanal very small.

Callidina bullata, sp. n.; synonym, *Callidina habita* Bryce, var. *bullata* Murray (**23**) (Plate II, figs. 10*a*–10*c*).

Specific characters.—Size moderate; hyaline, except alimentary canal; stoutish, trunk broader than corona. Collar prominent, corona wider than collar, discs with central papillae and setae; lobes of upper lip rounded, meeting in middle line. Antenna short. Teeth, two in each

PLATE III.



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SOUTH AFRICAN BDELLOIDA

jaw. Foot four-jointed, first joint ornamented with a number of hemispherical knobs, in several series. Spurs broad, divergent, acuminate, meeting in middle line or slightly separated.

General description.—Length about 380μ when feeding; diameter of corona 80μ, collar 75μ, neck μ, trunk 100μ, tip to tip of spurs 30μ. The general form is exactly like habita. The rostrum is broad, with large lamellae. There are prominences on the neck, on each side of the antenna. The jaws are triangular, and slightly constricted below the widest part. The ornamented foot is the only important distinction from habita. The disposition of the knobs is best understood from the figure. The first series contains four equal hemispherical knobs; the second series two similar knobs and a transversely oblong one in the middle line; behind that a single median hemispherical knob. No doubt the knobs may vary somewhat, but no variation has been noticed.

Intermediate between *C. habita* and *C. formosa.* It resembles habita, with the foot ornamented as in the type of formosa. *C. gunningi*, described below, has a superficial resemblance to *C. bullata* in possessing also an ornamented foot, but the knobs are different, only three in number on the foot, and there is another knob, on the anal segment.

Habitat.—Pondoland; abundant. Previously only recorded for Loch Treig in Scotland.

Callidina gunningi, sp. n. (Plate II, figs. 11*a*–11*c*).—*Specific characters*: Large, stout; corona large, with wide interspace; lobes of upper lip not meeting in middle line; rostrum broad; antenna short; teeth $2+{}^{1}/_{1}+2$; foot of four segments, the first bearing three bosses, two lateral and one dorsal; anal segment with dorsal boss; spurs broad at base, divergent, acuminate, without interspace.

General description.—Length, when feeding, 450μ, diameter of corona 120μ, of cheeks 100μ, of neck 75μ, of trunk 140μ, of first foot-joint 40μ, across spurs 35μ, length of jaw 35μ.

The discs are large, measuring between 45μ and 50μ, and they are separated by an interspace of almost 30μ; the central setae, or pencils of setae, are very short, and spring from very broad low processes. The collar is very inconspicuous, but the skinfolds running from it to form part of the upper lip increase in thickness towards the lip, and end in two prominent lobes, which are separated by a very deep sulcus, through which can be seen the "bridge" joining the two pedicels. The cheeks are bulging, and are separated by a constriction from smaller prominences just over the neck. The jaws are almost semicircles in outline, and have thickened borders. The principal teeth are thick, and the smaller striae are conspicuous.

The central trunk is barrel-shaped, and is longitudinally plicate with few broad folds. The rump is sharply marked off from the central trunk, and its two segments, though short, are clearly separable. The anal segment has a large dorsal boss or projection, on its posterior margin, just at the anus. The three processes on the first foot-joint are very prominent. The second foot-joint is short, and has no processes.

The stomach is voluminous, and its walls are filled with large globules or granules. The lower portion of the canal, next the intestine, is distinctly ciliate. The intestine is round. The glands between the mastax and the stomach are large.

A large, elliptical, thick shelled egg has been seen in the body. It measured 150μ by 90μ.

C. gunningi is one of a group of species of which *C. habita* Bryce may be taken as the type. It is only necessary to compare it critically with two species, *C. formosa* and *C. bullata*, which also have bosses on the first foot-joint. *C. formosa* (**24**) is easily distinguished, as the whole trunk is papillose. *C. bullata* Murray was described as a mere variety of *C. habita* (**23**), and is in this paper for the first time treated as a distinct species. It has a strong superficial resemblance to *C. gunningi*, yet differs in many characters. It is smaller, and has a prominent collar; the lobes of the upper lip meet in the middle line; there is no boss on the anal segment, and there are eight bosses on the first foot-segment. Attention to these points will make it easy to distinguish the two species. The armature of the foot of *C. gunningi* was constant in character in a large series of examples.

Habitat.—Pretoria, in moss collected by J. Hewitt; very abundant.

Callidina hewitti sp. n. (Plate II, figs. 12*a*–12*b*).—*Specific characters*: Of moderate size, hyaline; corona large, collar prominent, lobes of upper lip separated by small interspace; rostrum broad, antenna short; teeth about five in each jaw; first segment of foot with a large boss; spurs broad-based, acuminate, divergent, without interspace.

General description.—Length, when feeding, 360μ, diameter of corona 96μ, collar 70μ, neck 50μ, trunk 104μ, across spurs 30μ, length of jaw 30μ. The discs are about 35μ in diameter and bear long central seta, which arise from small papillae; the interspace between the discs is about 22μ. The skinfolds forming the collar are prominent, and are continued on to the upper lip where they end in large rounded lobes, separated by a small deep sulcus. Each jaw is triangular, and bears four or five strong teeth, with one thinner and numerous fine striae.

The trunk is barrel-shaped, with few, wide, longitudinal plicae. The rump is pyriform, with its two segments scarcely separated. The foot is four-jointed, the first joint bearing a boss like that of *C. habita*, but on the extreme posterior edge of the segment. The spurs are like those of *C. habita*. There is nothing peculiar in the internal organization. The stomach is voluminous, and the intestine shortly oval.

C. hewitti is another species related to *C. habita*. The numerous teeth distinguish it from all the species of that group, except *C. vesicularis* Murray (**21**), which is easily known by the two knobs on the first segment of the foot, and by the large vibratile tags. *C. hewitti* differs from *C. habita* in some minor characters—the separation of the lobes of the upper lip, and the more posterior position of the foot-boss.

Habitat.—Pretoria, among moss collected by J. Hewitt, April, 1910; several examples, but not abundant.

Callidina plicatula, sp. n. (Plate I, figs. 7*a*–7*b*).—*Specific characters*: Size moderate; slender; corona fairly large, discs separated by flat interspace; upper lip rounder, having a keystone-shaped central portion; collar prominent; antenna short; teeth 2–2; trunk deeply plicate;

rump with two deep constrictions; foot four-jointed, the second segment wider than the first, and having a kind of projecting annulus; spurs somewhat long, tapering, without interspace, outcurved; toes three.

General Description.—Length, when feeding, about 370μ, diameter of corona 65μ, of neck 40μ, of trunk 70μ, tip to tip of spurs 25μ, length of spur 12μ to 15μ. The discs are large, and the space separating them is about equal to half the diameter of a disc. The upper lip is unlobed and rounded, but somewhat flattened in the middle. Two lines run from its boundary, converging towards the rostrum, enclosing a space shaped like the keystone of an arch. There are central setae on the discs. The rostrum is broad, with the lamellae apparently separated, and the antenna is very short.

The skinfolds of the trunk are deep, and there are two especially pronounced ones running from the central trunk on to the preanal, near the median line, a similar pair continuing on to the anal. The anal and preanal segments are swollen, and separated by a deep constriction. The anal expands at its extreme end into a narrow flange.

The first segment of the foot is very short. The second is about as long as broad, and is broader than the first segment, bearing an annular thickening near its anterior edge. The spurs are like those of *C. plicata* Bryce (**3**), but they are relatively somewhat shorter. There is nothing calling for remark in the internal organization.

As the name is intended to imply, this species is very closely related to *C. plicata*. It differs in the entire upper lip, the total absence of the flanges on the rump, and in the enlarged second foot-segment. The close resemblance to *C. plicata* appears in the keystone form of the central part of the upper lip, the folds of the posterior part of the trunk, the deep constrictions bounding the anal and preanal segments, and the form of the spurs. Only *C. plicata* and two related species have those lines on the upper lip which give the appearance of a keystone. Some forms of *C. plicata* completely lack the flanges or processes on the rump. The characters of lip and foot sufficiently distinguish *C. plicatula* from such forms of *C. plicata*.

Like *C. plicata* it is extremely restless and jerky in its movements, and is thus very difficult to observe accurately.

Habitat.—Pretoria, in moss collected by J. Hewitt, April, 1910; plentiful.

Callidina aculeata (Milne) (**19**); synonym, *Macrotrachela aculeata* Milne (Plate I, figs. 4–6*c*).—Three distinct forms were observed. As Mr. Milne's figure is too small to show much detail, and his description is somewhat meagre, I will here figure and describe all three as fully as possible.

First (Fig 5).—Sufficiently near Milne's type, it has two dorsal series of spicules on the anterior trunk, two on the central trunk (one of them at the widest part), and three on the "rump". The anterior margin of the trunk shows two prominences on the dorsal side, and four smaller points on the ventral side. The two anterior rows of spicules are continued across the ventral side also; all the other rows are interrupted on the ventral side. The ventral surface of the central trunk is transversely plicate, and the folds are scalloped. There are some small spicules on the verge of the ventral surface besides those belonging to the series. The anal segment is curiously swollen, and separated by a constriction from the segment in front. It is a question whether the segment in front of the apparent anal segment is the preanal or the fourth central. If the latter, the seeming anal must be compounded of two segments. The first foot-joint has an annular swelling near its posterior extremity. The foot is four-jointed. The spurs are somewhat slender, divergent, acuminate, without interspace. Teeth two; antenna $\frac{3}{5}$ of neck width; length, creeping, 225μ.

Second (Fig. 4).—The series of spines on the trunk are as in the first variety, but they are larger and obtuse. The anterior row has fewer spines. There are no prominences on the anterior margin of the trunk. The spines of the rump differ from those of the preceding variety—especially there are two longish curved lateral spines, which have not been noted for any other variety of the species. Collar very prominent; discs separated by a narrow, deep sulcus; central papillae and setae on discs; length of antenna equal to $\frac{1}{2}$ to $\frac{3}{5}$ of diameter of neck. Teeth two. Only the second series of spines continues right across the ventral side. Length, 300μ.

Third (figs. 6*a*–6*c*).—Distinguished from the two preceding varieties by the reduction in the number of spines. There are no transverse rows, and there are only two lateral spicules belonging to the anterior row, and two lateral spicules on the anal segment. The longitudinal skinfolds are very prettily scalloped. The foot is slender, and without annular swelling. The spurs are slender, incurved, and are separated by a small interspace. The collar is very prominent, and the narrow sulcus between the discs is quite filled by a large "ligule". Teeth two.

These extreme forms indicate a wide degree of variability, but the whole group to which they belong is excessively variable. Till recently I did not suppose *C. aculeata* to be closely related to what has been called the multispinosa group. The second variety described above has the slender lateral spines on the rump which are eminently characteristic of that group.

The multispinosa group is a vast congeries of forms, some half-dozen of which have been recognized as species, but including a multitude of widely diverse forms, which are so linked together that it is often impossible to decide to which of several species they should be assigned. I believe the group to constitute a genus distinct from Callidina, although it could only be distinguished by superficial characters. Such characters have already been used to separate genera of Bdelloids—for example, *Pleuretra* Bryce (**5**).

Callidina multispinosa Thomp. (**35**); synonym, *Macrotrachela multispinosa* Thomp. (Plate I, figs. 8–9, and Plate III, figs. 13 14 16–18).—Besides approximately typical longspined forms, there occurred five distinct varieties.

First (fig. 13).—A long-spined variety, differing from the type chiefly in that the spines are swollen below, and setiform above. A very similar variety is known in India, and is figured (**24**). The African form, while superficially very similar, differs in many little points, in the aggregate of some importance. There are fewer long spines on the two anterior trunk segments—the lateral spicule between the first and second segments of the anterior trunk are lacking. The two transverse dorsal series of spines are lacking, only the two end members of each being present. The lateral process at the widest part of the trunk is a long swollen spine, the second is a spicule. The two processes at the posterior corners of the trunk are thick curved horns (as in variety *crassispinosa* Murray [25]). The processes on the rump are large and lanceolate, whereas in the Indian form they are small " combs " of several spicules each. There is a slender lateral spine on the anal, not present in the Indian form. Teeth, four in each jaw; central setae on discs.

Second.—Variety *brevispinosa* Murray (**26**). Exactly as described from Old Calabar, 1908. Mr. Bryce at the first expressed the belief that this was specifically distinct from multispinosa. Further experience of many forms gives weight to his opinion. It is found that the short-spined forms have almost invariably only two teeth while the long-spined forms have from three to five teeth. I have seen only two individual exceptions (a short-spined one with four teeth, and a long-spined with only two) which either prove the rule or upset it. As the whole group needs overhauling, brevispinosa is left in the meanwhile a variety.

Third.—Short-spined. Distinguished by the extreme reduction of the spines. There are only a few lateral spicules on the anterior trunk, none on the central except small spicules on the posterior corners, and a few small ones on the rump. The spurs are very short, blunt, and incurved, as shown in the figure (fig. 16).

Fourth (figs. 8*a*–8*c*.)—Short-spined; differing from brevispinosa chiefly in the replacing of some of the spines of the anterior trunk by somewhat ligular processes, having small bulbose bases and expanded flat tips. Teeth, two.

The development of ligular processes is carried further in a form from Central Africa, which is here figured for comparison, as it has never before been figured (fig. 9). It will be seen that this form has three pairs of ligular processes on the anterior trunk. The lateral process on the first trunk segment is a sharp curved spine with a bulbose base. Teeth, two.

Fifth (fig. 14).—A puzzling form, resembling multispinosa, brevispinosa, and pinniger. On the first trunk segment there is only one pair of slender curved spines; on the second segment there are two pairs of lateral broad leaf-like laminae; on the central trunk there is a transverse row of little knobs, and near the ends of the row, on each side, a lateral curved spine.

Sixth (fig. 18).—A variety resembling brevispinosa, but with knobs instead of spines, thus approaching, or at least resembling *C. papillosa*. The knobs are so numerous that the outline has an erose appearance.

Callidina pinnigera Murray (**26**) (Plate III, fig. 15).—This species varies extremely, being closely linked with *C. multispinosa* and *C. zickendrahti* Richters (**28**). These extreme forms do not occur in Africa. The form from Pondoland only differs from the type in minor details. The broad fins are not so broadly truncate, and are not widest at the end, but some way lower down. The processes at the angles of the fourth central, preanal, and anal segments are ligular and expanded upwards; in the type they are stout spines with bulbose bases. The five processes forming a transverse row on the anal are also ligular, and they are widely divergent and separated; in the type they are very broad, leaf-like, imbricated.

Mniobia scabrosa Murray (**27**).—Discovered in Uganda (Pearce) 1907, but only recently described; it is now known also in New Zealand and Australia.

Rotifer longirostris (Janson) (**15**); synonym, *Callidina longirostris* Janson.—Rousselet's record of *R. tardus* for Natal, doubtless based on Kirkman's note, probably refers to this species, which is very common in Africa. The variety (or perhaps only "state") *fimbriata* Murray (**24**) is commoner than the type.

Habrotrocha angusticollis Murray (**20**).—Besides the usual brown cases, hyaline cases were noted.

H. ampulla Murray (**27**).—First found by Pearce (1907), but only recently described; it is now known also in Australia.

H. eremita (Bryce) (**4**).—Apparently a rare species, but commoner in Africa than elsewhere.

H. perforata (Murray) (**24**).—Though a common species in tropical and sub-tropical countries, the foot had never been seen. This was owing to the difficulty of getting the animal out of its shell. In Cape Colony dead examples were found without shells, and several new features were discovered. There is a small dorsal "tail", like that of *H. caudata*, which occupies the posterior tube of the shell. Beside the anus there is another process, blunt and conical. The foot is very short, but apparently of two joints between the anus and the spurs. The spurs are very short and obtuse, and are separated by a wide interspace (Plate III, figs. 17*a*–17*c*).

H. caudata Murray (**27**).—Only recently described from tropical Africa, the species is now known also in Australia.

H. acornis Murray (**27**).—Recently discovered in British East Africa; not yet known except in Africa.

H. auriculata Murray (**27**).—Recently discovered in British East Africa, and now known in Australia.

Habrotrocha cucullata, sp. n. (Plate III, figs. 20*a*–20*d*).—*Specific characters*: Small, slender; trunk papillose; rostrum constricted between the two joints, lamella forming a single spoonshaped hood; corona small; antenna slender, length equal to the diameter of the neck; teeth about four in each jaw; foot very short; spurs narrow, tapering, divergent, without interspace.

General description.—Extreme length when extended 300μ. The trunk is of a pale yellow colour, and is closely plicate and papillose. The neck and foot are smooth and colourless. The body is of characteristic form, having pronounced constrictions which habitually return after all the changes of form. One such constriction is at the base of the terminal joint of the rostrum; another is in the anterior part of the trunk. The widest part of the central trunk varies in position with the movements of the animal. The rump is small, and the foot extremely small, with little trace of segmentation. The spurs are of moderate size, acuminate, and widely divergent.

The gullet is very long and makes several loops between the mouth and the mastax. The jaws are narrow, triangular, and bear usually four teeth in each. The stomach is voluminous and filled with pellets.

The corona was never seen unfolded, but in the contracted state it can be seen to be of the type which prevails in the genus, in which the discs are scarcely separated. The two segments of the rostrum are unusually distinct, the end one being enlarged like the end joint of the thumb (as in *Pleuretra humerosa*) (**20**). The two lamellae are never apparent. They appear to have coalesced completely into a single large hood, like that of Colurus or Metopidia, which arches over the brush of cilia.

It is rarely advisable to describe a Bdelloid rotifer as a new species if it has not been seen with the corona expanded, feeding. Even if it is undeniably a distinct species, it must have very pronounced features before it can be safely described, and the description must be careful and as complete as possible.

In this case the concurrence of a papillose trunk with a definite general form, and especially the peculiar form of the rostrum and lamellae, seem to justify the course taken, as the animal should be recognizable with confidence from these characters. There are only a few species of Habrotrocha which have the trunk papillose, and there are none known in which the lamellae form such a definite single hood. A hood most nearly approaching that of *H. cucullata* is found in *Callidina natans* (**23**). Two species of the genus are papillose, *H. aspera* and *H. crenata*. *H. aspera* has only two teeth in each jaw; *H. crenata* has a greater number of teeth than *H. cucullata*, a shorter antenna, and there are prominent lateral bosses on the rump.

Habitat.—Pretoria, collected by J. Hewitt, April, 1910; fairly numerous.

Habrotrocha sp. (Plate III, figs. 19*a*–19*e*).—A small animal, with spurs of distinctive form, like those of *C. quadricornifera*. It is certainly a good species, but has not been sufficiently studied. The rostrum is very short and broad. The jaw is triangular, with five or six teeth. The foot is very short, and the penultimate segment (which bears the spurs) has an annular swelling like that of *Philodina indica*.

Habitat.—Woodbush; also known in British East Africa.

SUMMARY OF RESULTS.

Our list numbers forty species, of which six are described as new species, thirty-one others are new records for South Africa, and sixteen are new records for Africa. One of the new species (*Callidina bullata*) had been previously described as a variety of *C. habita*.

It seems remarkable, as a first glance, that only three of our forty species should be found in Mr. Rousselet's list. The explanation is that all our species were obtained from dry moss, whilst all those in Rousselet's list are aquatic species. The presence of three aquatic species in our list is rather surprising, but they may have come from eggs. Although I know that Mr. Milne has worked at the Bdelloida of mosses, he has not included any of the moss dwellers in the list which he supplied to Mr. Rousselet.

Although forty species is a considerable number to obtain from dry mosses, our mosses yielded more than that. Several species were observed which have not yet been described, but they were previously known to other naturalists. Some other distinct species were found, but they were not sufficiently studied.

RÉSUMÉ OF ALL AFRICAN BDELLOIDS.

Historical sketch.—In this account of the history of the knowledge of African Bdelloids only the continent is considered—the islands are left out of the account, except when the general distribution is in question.

The first mention of African Bdelloids I find in Ehrenberg, who in 1832 (**10**) records three species for North Africa, and in a later paper of the same year these species are described (**11**). They are *Hydrias*, *Typhlina*, and *Rot. vulgaris*. In the Mikrogeologie 1854 (**12**) he adds the three species *Callidina rediviva*, *C. tetraodon*, and *C. hexaodon*, possibly recorded in earlier papers which I have not traced. In the same year Schmarda (**32**) notes four species in Egypt, and in 1859 (**33**) he mentions the same four.

For more than thirty years I find no further note of African Bdelloids, when in 1891 Stuhlmann records a Rotifer sp. for the Victoria Nyansa (**34**). In Barrois and Daday's ten Rotifera from Egypt 1894 (**2**) there does not appear to have been any Bdelloid, according to Daday 1910 (**9**). In 1896 Collin found three species, including the new species *Phil. emini*, in Stuhlmann's material from East Africa (**6**). In 1898 Marchoux (**18**) described *Phil. parasitica* from Senegal. In 1907 Daday (**7**) mentions two species from the Victoria Nyanza, and in 1910 (**8**) he records ct nuru; for the Soudan, and later in 1910 (**9**) seven species for German East Africa.

There remain only my two papers—1908 (**23**), nine species (one new) from Old Calabar and Uganda; 1911 (**27**), thirty-three species (nine new) from British East Africa. The papers on South African species were noted in the Introduction.

From these various works I have compiled the accompanying list of all known African Bdelloids. The list includes the doubtful species recorded by Ehrenberg and Schmarda. It is now questioned whether some of Ehrenberg's species were even Bdelloids at all. These doubtful species, which we still cannot authoritatively disallow, are indicated by an asterisk.

The distribution in Africa is indicated in twelve columns, but the world-distribution in detail is not attempted, though some notes on the subject are added.

In 1907 the British Antarctic Expedition collected eleven species of Bdelloids on Table Mountain, which have not yet been recorded. As the paper dealing with them goes to press about the same time as this, and as it is quite uncertain which will appear first, they are included in this list. Among them is the new species *Dissotrocha pectinata*.

DISTRIBUTION OF ALL AFRICAN BDELLOIDS.

	NORTH.		CENTRAL.					SOUTH.				
	Egypt.	Sahara.	Senegal.	Calabar.	Brit. E. Africa.	Ger. E. Africa.	Congo.	Mozambique.	Rhodesia.	Transvaal.	Natal.	Cape Colony.
Philodina citrina Ehr.						×						×
P. flaviceps Bryce												×
P. roseola Ehr.	×					×					×	
P. brevipes Murray												×
P. erythrophthalma Ehr.											×	
P. megalotrocha Ehr.											×	×
**P. gracilis* Schmarda	×											
**P. calcarata* Schmarda	×											
**P. parasitica* Marchoux			×									
P. rugosa Bryce					×					×		×
**P. emini* Collin						×						
P. plena (Bryce)					×					×		×
P. vorax (Janson)					×					×		×
Pleuretra alpium (Ehr.)					×							×
P. humerosa (Murray)					×							×
P. brycei (Weber)					×							
P. africana Murray										×		
Dissotrocha aculeata (Ehr.)						×						×
D. macrostyla (Ehr.)												×
D. pectinata Murray												×
**Callidina elegans* Ehr.												×
C. habita Bryce					×					×		×
C. formosa Murray					×							×
C. bullata Murray												×
C. quadricornifera (Milne)												×
C. musculosa (Milne)												×
C. gunningi Murray										×		
C. hewitti Murray										×		
C. allani Murray					×							
C. plicata Bryce					×					×		×
C. plicatula Murray										×		
C. punctata Murray					×							
C. papillosa (Thomp.)					×							
C. aculeata (Milne)					×					×		×
C. multispinosa (Thomp.)				×	×					×		×
C. pinnigera Murray					×					×		×

	NORTH.		CENTRAL.					SOUTH				
	Egypt.	Sahara.	Senegal.	Calabar.	Brit. E. Afri·a.	Ger. E. Africa.	Congo.	Mozambique.	Rhode·ia.	Transvaal.	Natal.	Cape Colony.
**C. rediviva* Ehr.		×						×				×
**C. hexaodon* Ehr.												×
Mniobia tetraodon (Ehr.)		×			×					×		
M. russeola (Zel.)					×							
M. scarlatina (Ehr.)					×							
M. scabrosa Murray					×							×
Rotifer vulgaris Schrank	×					×					×	×
R. macrourus Müller						×					×	
R. macroceros Gosse						×						×
**R. megaceros* Schmarda	×											
R. tardigradus Ehr.												×
R. longirostris (Janson)					×					×	×	×
R. neptunius (Ehr.)						×	×		×		×	×
Habrotrocha eremita (Bryce)					×							×
H. angusticollis (Murray)				×						×		×
H. ampulla Murray					×					×		
H. longiceps (Murray)				×	×					×		×
H. pusilla (Bryce)					×							
H. perforata (Murray)				×	×					×		
H. caudata Murray					×					×		×
H. acornis Murray					×					×		
H. constricta (Duj.)					×					×		×
H. crenata (Murray)					×							
H. appendiculata Murray					×							
H. pulchra (Murray)										×		
H. aspera (Bryce)										×		
H. cucullata Murray										×		
H. brocklehursti Murray					×							
H. auriculata Murray					×							
Adineta vaga (Davis)					×					×		×
A. gracilis Janson										×		×
A. longicornis Murray					×					×		×
A. barbata Janson					×					×		×
**Hydrias cornigera* Ehr.	×											
**Typhlina viridis* Ehr.	×											

In this table I have included all the records known to me, whatever my opinion of their value, unless in any instance it could be shown that two recorded names were synonyms. The species of doubtful identity are indicated by an asterisk (*).

The list contains 71 species, a very considerable number, when we consider that Bryce as recently as November, 1910 (**5**), admitted only 105 species of Bdelloids for the whole world. However, some 15 new African species have been described since that date.

If we deduct the doubtful species, which may of course possibly be repeated in the list, there are sixty-one well authenticated African species. These are distributed in the different localities as follows :—Egypt seven species, Sahara two, Senegal one, Calabar four, British East Africa thirty-five, German East Africa eight, Congo Free State one, Mozambique one, Rhodesia one, Transvaal twenty-eight, Natal seven, and Cape Colony thirty-nine.

Eighteen species, about quarter of the total, are only known in Africa ; five of them are confined to North Africa (Egypt), one to West Africa (Senegal), four to East Africa, and six to South Africa. Thirty species are common to Central and South Africa, but only two of these are among the species peculiar to Africa. Of course with advancing knowledge these limitations are not likely to remain long.

There are only three of the districts about the moss-faunas of which we know much, and they all have very fair lists of species—British East Africa thirty-five, Transvaal twenty-eight, Cape Colony thirty-eight. The moss-dwellers, in fact, form the great bulk of the Bdelloida—at least fifty of them are in our African list.

In the islands adjacent to the African continent a few species have been recorded—for the Azores, by Barrois, 1888 (**1**) ; the Canaries, by Heinis, 1908 (**13**) ; Madagascar, by Voeltzkow, 1891 (**37**), and Murray, 1908 (**26**) ; the Comoro Islands by Richters, 1908 (**29**). Among these there are only two species which are not known on the continent, *Mniobia symbiotica* in the Canaries, and *Habrotrocha crenata*, variety *nodosa* (now regarded as a distinct species), in Madagascar.

The general distribution of the African Bdelloids over the world is not indicated. The published facts are scarcely sufficient to make this of any value. It may be said in a general way that about forty of the African species are common, and fairly widely distributed, though only a few can be described as cosmopolitan.

The other thirty seem to be rare or local, as far as our present knowledge goes—eighteen of them, as already stated, being only known in Africa.

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EXPLANATION OF PLATE I.

Fig. 1*a*. *Callidina habita* Bryce; variety with lobes of upper lip separated.
1*b*. The same; side view of foot.
2*a*. *Pleuretra africana* Murr.
2*b*. The same; jaw.
2*c*. The same; the neck lobes approximated.
2*d*. The same; anterior ventral margin of trunk.
2*e*. The same; spurs.
3*a*. *C. habita*; variety having anal segment expanded at the posterior end.
3*b*. The same; spurs.
4. *C. aculeata* Milne; form with many blunt knobs, and lateral setae on the rump.
5. The same; form with many spicules, and no lateral setae.
6*a*. The same; form with few spicules; ligule between discs.
6*b*. The same; jaw.
6*c*. The same; spurs.

Fig. 7*a*. *C. plicatula* Murr.
7*b*. The same; foot.

EXPLANATION OF PLATE II.

Fig. 8*a*. *Callidina multispinosa* Thomp.; variety with some ligular processes.
8*b*. The same; jaw.
8*c*. The same; one ligule.
9. *C. multispinosa*; variety similar to 8, but with more of the ligular processes (from East Africa).
10*a*. *C. bullata* Murray.
10*b*. The same; jaw.
10*c*. The same; side view of foot.
11*a*. *C. gunningi* Murray.
11*b*. The same; head and rostrum, ventral view.
11*c*. The same; foot, showing knobs and toes.
12*a*. *C. hewitti* Murray.
12*b*. The same; side view of foot.

EXPLANATION OF PLATE III.

Fig. 13*a*. *Callidina multispinosa* Thomp.; variety with processes swollen below.
13*b*. The same; jaw.
14. *C. multispinosa*, another variety.
15*a*. *C. pinniger* Murray.
15*b*. The same; jaw.
16*a*. *C. multispinosa*; short-spined variety.
16*b*. The same; spurs.
17*a*. *Habrotrocha perforata* Murray; side view of an animal without its shell, showing the two dorsal processes, and the spurs.
17*b*. The same; shell containing an egg.
17*c*. The same; dorsal view of foot, showing spurs and second dorsal process.
18*a*. *C. multispinosa*; short-spined "erose" variety.
18*b*. The same; jaw.
19*a*. *Habrotrocha*, sp.
19*b*. The same; jaw.
19*c*. The same; side view of penultimate segment, showing annular swelling.
19*d*. The same; spurs.
19*e*. The same; rump and foot.
20*a*. *Habrotrocha cucullata* Murray.
20*b*. The same; head, rostrum, and hood.
20*c*. The same; side view of hood.
20*d*. The same; jaw.
20*e*. The same; side view of foot.
20*f*. The same; spurs.

TRANSVAAL MUSEUM COLLECTION OF SOUTH AFRICAN BIRDS' EGGS.

By Dr. J. W. B. Gunning, Director.

As will be seen from the following list, the Transvaal Museum possesses a very rich collection of South African birds' eggs.

In all nearly 1600 clutches have been registered. The letters C.C., T., O.F.S., and P. of course mean Cape Colony, Transvaal, Orange Free State, Pondoland, etc.

More than three-fourths were procured by careful collectors (Rev. N. Roberts, A. Roberts, R. Ivy, Major Sparrow), and in many cases the bird has been secured as well.

The second list contains the type specimens in the Museum described to date. The third list contains eggs that have not yet been described (including *Botaurus stellaris*, *Lanius collurio*), and a few others that have been described from Europe, whereas the fourth list enumerates those eggs that have been described insufficiently or faultily.

These species will shortly be described and figured in these Annals.

1	Struthio australis, Gurn.	South Africa.
2	Spheniscus demersus, Linn.	N. and C.C.
3	Colymbus cristatus, Linn.	T.
4	,, capensis [(Licht.) Salv.]	T. and C.C.
5	Prion brevirostris, Gld.	C.C.
6	Hydrochelidon hybrida (Pall.)	C.C.
7	Phalacrocorax lucidus (Licht.)	C.C.
8	,, capensis (Sparr.)	C.C.
9	Anhinga rufa (Lacep Daud.)	C.C.
10	Pelecanus roseus, Gm.	C.C.
11	Thalassornis leuconotus, Eyt.	T. and P.
12	Chenalopex aegyptiacus (Linn.)	C.C.
13	Cursorius rufus, Gould	T. and O.F.S.
14	,, temmincki, Sw.	T. and C.C.
15	Rhinoptilus africanus (Temm.)	T., C.C., and O.F.S.
16	Charadrius varius, Vieill.	T.
17	,, tricollaris (Vieill.)	T.
18	Stephanibyx melanopterus (Cretschm.)	T. and N.
19	,, coronatus (Bodd.)	T., O.F.S., and C.C.
20	Hoplopterus speciosus (Wagl.)	T.
21	Lobivanellus lateralis (Sm.)	R.
22	Oedicnemus capensis, Licht.	C.C. and O.F.S.
23	Gallinago nigripennis, Bp.	T. and P.
24	Otis caffra, Licht.	N.

25	Otis ruficrista, A. Sm.	T.
26	,, afroides, A. Sm.	C.C. and O.F.S.
27	,, barrowi, J. E. Grey	O.F.S.
28	Bugeranus carunculatus (Gm.)	T.
29	Anthropoides paradisea (Licht.)	T., C.C., N., and R.
30	Balaerica regulorum (Benn.)	Laid in captivity.
31	Actophilus africanus (Gm.)	N.
32	Rallus caerulescens, Gm.	T.
33	Crex egregia, Ptrs.	N.
34	Limnocorax niger (Gm.)	T. and N.
35	Ortygospiza pusilla obscura (Neum.)	T. and N.
36	Porphyrio porphyrio (Linn.)	T.
37	Gallinula chloropus (Linn.)	T. and C.C.
38	,, angulata, Sund.	T.
39	Fulica cristata, Gm.	T. and C.C.
40	Turnix lepurana (A. Sm.)	T.
41	Pterocles bicinctus, Temm.	T.
42	,, namaquus (Gm.)	N. and O.F.S.
43	Ibis aethiopica (Lath.)	T.
44	Theristicus hagedash (Lath.)	N. and C.C.
45	Scopus umbretta, Gm.	T., N., C.C., and R.
46	Nycticorax leuconotus (Wagl.)	T.
47	Botaurus stellaris capensis (Schl.)	P.
48	Ardetta payesi ([Verr.] Hart)	T.
49	Ardeola ralloides (Scop.)	T.
50	Ardea goliath, Cretschm.	T. and O.F.S.
51	,, purpurea, Linn.	T.
52	,, cinerea, Linn.	T.
53	,, melanocephala, Vig. and Childr.	T.
54	Bubulcus ibis (Linn.)	T.
55	Herodias garzetta (Linn.)	T.
56	Vinago delalandei, Bp.	T.
57	Columba phaeonota, G. R. Gr.	T., C.C., and N.
58	,, arquatrix (Temm.)	N. and C.C.
59	Turtur senegalensis (Linn.)	T., O.F.S., N., C.C., and R
60	,, semitorquatus (Rupp.)	N. and C.C.
61	,, capicola (Sund.)	T., C.C., and N.
62	Aplopelia larvata (Temm.)	N.
63	Tympanistria tympanistria (Temm.)	N. and C.C.
64	Chalcopelia afra (Linn.)	C.C.
65	Oena capensis (Linn.)	T., N., and R.
66	Numida coronata, Gray	T., C.C., O.F.S., and R.
67	Guttera edouardi (Hartl.)	P.E.A.
68	Pternistes swainsoni (Smith)	T. and R.
69	,, nudicollis (Bodd.)	T. and C.C.
70	Francolinus levaillanti, Val.	T., C.C., and O.F.S.
71	,, afer (Latham)	T., C.C., and R.
72	,, gariepensis, Smith	T.
73	,, coqui, Smith	T.

74	Francolinus sephaena, Smith	T.
75	,, kirki, Hartl	P.E.A.
76	Coturnix coturnix capensis, Licht	T., C.C., and N.
77	,, delagoruei (Delag.)	T.
78	Otogyps auricularis (Daud.)	T.
79	Gyps kolbei (Daud.)	T.
80	Pseudogyps africanus (Salv.)	T.
81	Serpentarius secretarius (Miller)	T.
82	Circus ranivorus (Daud.)	T. and N.
83	Kaupifalco monogrammicus (Temm.)	R.
84	Astur tachiro (Daud.)	C.C. and N.
85	Accipiter rufiventris, Smith	T.
86	,, minullus (Daud.)	T.
87	Spizaetus bellicosus (Daud.)	T.
88	Hieraaetus fasciatus minor Erl	R.
89	,, pennatus (Gm.)	T.
90	,, wahlbergi (Sund.)	T.
91	Aquila rapax (Temm.)	T.
92	Buteo jakal (Daud.)	T. and N.
93	Haliaetus vocifer (Daud.)	N.
94	Milvus aegyptius (Gm.)	R.
95	Elanus caeruleus (Desf.)	T. and N.
96	Falco ruficollis, Swains	T.
97	Cerchneis rupicoloides (Smith)	T.
98	,, rupicola (Daud.)	T., R., N., and C.C
99	,, naumanni (Fleisch.)	T.
100	Polioheirax semitorquatus (A. Sm.)	T.
101	Bubo capensis, Smith	C.C.
102	,, maculosus (Vieill.)	T., C.C., and R.
103	Asio nisuella (Daud.)	T. and N.
104	,, leucotis erlangeri, O. Gr	T.
105	Glaucidium capense (A. Sm.)	P.E.A.
106	,, perlatum (Vieill.)	T.
107	Strix flammea maculata, Linn	T., C.C., and R.
108	,, capensis, A. Sm	T.
109	Agapornis nigrigenys, W. L. Scl	R.
110	Schizorhis concolor (Smith)	T.
111	Turacus corythaix (Wagl.)	C.C.
112	Centropus senegalensis (Linn.)	C.C. and N.
113	,, burchelli, Swains	T.
114	,, superciliosus, H. and Ehr	C.C.
115	Clamator serratus (Sparrm.)	N.
116	,, jacobinus (Bodd.)	T.
117	Cuculus clamosus, Latham	C.C.
118	,, solitarius, Steph	N. and C.C.
119	Chrysococcyx cupreus (Bodd.)	T., N., and C.C.
120	Indicator indicator (Gm.)	C.C.
121	,, minor, Steph	T.
122	Lybius zombae (Bodd.)	P.E.A.

123	Lybius torquatus (Dumont)	T. and C.C.
124	Tricholaema leucomelas (Bodd.)	T.
125	Trachyphonus cafer (Vieill.)	T.
126	Iynx ruficollis, Wagl.	C.C.
127	Geocolaptes olivaceus (Gm.)	N. and O.F.S.
128	Dendromus malherbei (Cass.)	P.E.A.
129	,, bennetti (Smith)	T.
130	Dendropicos hartlaubi, Malh.	P.E.A.
131	Colius striatus, Gm.	C.C.
132	,, colius (Linn.)	T.
133	,, indicus, Lath.	T. and C.C.
134	Coracias caudatus, L.	T.
135	Eurystomus afer (Lath.)	P.E.A.
136	Bucorvus cafer (Schl.)	N.
137	Lophoceros melanoleucos (Licht.)	N.
138	,, neumanni, Rchw.	P.E.A.
139	,, nasutus epirhinus (Sund.)	T.
140	,, leucomelas (Licht.)	T.
141	,, erythrorhynchus (Temm.)	T.
142	Halcyon chelicuti (Stanl.)	P.E.A.
143	,, albiventris (Scop.)	T., C.C., and N.
144	,, albiventris orientalis, Ptrs.	P.E.A.
145	Ispidina natalensis (Smith)	N.
146	Corythornis cyanostigma (Rupp.)	T., N., and C.C.
147	Ceryle rudis (Linn.)	T. and N.
148	,, maxima (Pall.)	T.
149	Alcedo semitorquatus, Swains.	C.C.
150	Melittophagus meridionalis, Sharpe	T. and N.
151	Merops apiaster, Linn.	R.
152	Upupa africana, Bchst.	T., C.C., N., and P.E.A
153	Irrisor viridis (Licht.)	C.C.
154	,, erythrorhynchus viridis (Licht.)	P.E.A.
155	Rhinopomastus cyanomelas (Vieill.)	T.
156	Caprimulgus pectoralis, Cuv.	T.
157	,, rufigena, A. Sm.	T.
158	,, fossei [Verr.], Hartl.	P.E.A.
159	Macrodypterus vexillarius (J. Gld.)	P.E.A.
160	Apus apus (Linn.)	N.
161	,, caffer (Licht.)	T., N., and C.C.
162	Riparia cincta (Bodd.)	N.
163	,, paludicola (Vieill.)	T.
164	,, fuligula (Licht.)	T., N., and C.C.
165	Hirundo dimidiata, Sund.	T.
166	,, albigularis, Strickl.	T. and N.
167	,, smithi, Leach	P.E.A.
168	,, cucullata, Bodd.	T., N., and C.C.
169	,, puella, Temm. and Schl.	C.C. and P.E.A.
170	,, semirufa, Sund.	T.
171	,, atrocaerulea, Sund.	N.

172	Petrochelidon spilodera, Sund.	T. and N.
173	Psalidoproene holomelana (Sund.)	C.C.
174	Melaenornis ater (Sund.)	T.
175	Sigelus silens (Shaw)	T. and C.C.
176	Alseonax caerulescens (Hartl.)	P.E.A.
177	,, adustus (Boie)	C.C., T., and N.
178	Batis capensis (Linn.)	N. and C.C.
179	,, molitor (Hahn & Kust)	N.
180	,, pririt (Vieill.)	C.C.
181	Tchitrea perspicillata (Swains.)	T., N., and C.C.
182	Campephaga nigra, Vieill.	C.C.
183	Eurocephalus anguitimens, Vieill.	T.
184	Prionops talacoma, A. Sm.	T.
185	Nilaus brubru (Lath.)	T.
186	Pomatrhynchus tschagra, Vieill.	C.C.
187	,, australis (A. Sm.)	T.
188	,, senegalus (Linn.)	T., C.C., N., and P.E.A.
189	Chlorophoneus rubiginosus (Sund.)	C.C.
190	Pelicinius zeylonus (L.)	T.
191	Laniarius rufiventris (Sw.)	T., C.C., N., and Z.
192	Dryoscopus cubla (Shaw)	T., C.C., and N.
193	,, ,, hamatus, Hartl.	P.E.A.
194	Lanius collaris, L.	T., C.C., and N.
195	,, subcoronatus, Sm.	T.
196	,, collurio, Linn.	C.C.
197	Urolestes melanoleucus (Jard.)	T.
198	Corvus scapulatus, Daud.	T.
199	Heterocorax capensis (Licht.)	T., C.C., and N.
200	Dicrurus afer (A. Licht.)	N., T., C.C., and P.E.A
201	,, ludwigii, Smith	T.
202	Oriolus larvatus (Licht.)	C.C. and T.
203	Buphaga erythrorhynchus (Stanl.)	N.
204	Spreo bicolor (Gm.)	N., T., and O.F.S.
205	Perissornis carunculatus (Gm.)	C.C.
206	Lamprocolius melanogaster (Sw.)	C.C.
207	,, phoenicopterus (Sw.)	C.C.
208	,, ,, bispecularis (Strkl.)	T., N., and R.
209	Amydrus morio (Linn.)	T., N., and C.C.
210	Lamprotornis australis, Sm.	T.
211	Plocepasser mahali, Smith	T.
212	Sporopipes squamifrons (Smith)	T. and R.
213	Anaplectes rubriceps (Sund.)	T.
214	Ploceus bicolor, Vieill.	N. and C.C.
215	,, ocularia (Smith)	T., N., and C.C.
216	,, ,, crocatus (Hartl.)	P.E.A.
217	,, spilonotus (Vig.)	T., N., C.C., and P.E.A.
218	,, cabanisi (Ptrs.)	T.
219	,, velatus, Vieill.	T., N., O.F.S.
220	,, auricapillus, Sw.	T.

221	Ploceus capensis (Linn.)	C.C.
222	,, ,, olivaceus (Hahn)	T., C.C., and N.
223	,, xanthops, Hartl	P.E.A.
224	,, subaureus (Smith)	N.
225	Amblyospiza albifrons (Vig.)	N.
226	Quelea sanguinirostris lathami (A. Sm.).	T., and laid in captivity
227	Pyromelana taha (Smith)	T. and N.
228	,, flammiceps (Sw.)	P.E.A.
229	,, orix (Gm.)	T., N., and O.F.S.
230	Euplectes capensis (Linn.)	N.
231	Urobrachya axillaris (Smith)	N.
232	Coliuspasser ardens (Bodd.)	T., N., and C.C.
233	,, albonotatus (Cass.)	T.
234	Diatropura progne (Bodd.)	T., N., and O.F.S.
235	Spermestes scutata, Sw.	N.
236	,, nigriceps, Cass	P.E.A.
237	Amadina erthrocephala (L.)	T.
238	Estrilda astrild (Linn.)	T., N., and R.
239	,, subflava (Vieill.)	N.
240	,, erythronotos (Vieill.)	T.
241	Lagonosticta rubricata (Licht.)	N.
242	Ortygospiza polyzona (Temm.)	T. and N.
243	Neisna dufresnei (Vieill.)	N. and C.C.
244	Uraeginthus angolensis (Linn.)	T.
245	Vidua serena (Linn.)	N.
246	Passer griseus (Vieill.)	T.
247	,, melanurus (St. Mull.)	T., O.F.S., and C.C.
248	,, motitensis, A. Sm	T.
249	Philetairus socius (Lath.)	T.
250	Petronia superciliaris ([Hay] Blyth)	T., C.C., and R.
251	Poliospiza angolensis (Gm.)	T.
252	,, gularis (Smith)	T. and C.C.
253	Serinus canicollis (Sw.)	T., C.C., and N.
254	,, sulphuratus (Linn.)	N. and C.C.
255	,, flaviventris (Sw.)	C.C.
256	,, marshalli, Shell	T.
257	,, icterus (Vieill.)	N. and C.C.
258	Emberiza flaviventris, Steph	T. and C.C.
259	Fringillaria capensis (Linn.)	T. and O.F.S.
260	,, reidi, Shell	T.
261	,, tahapisi, A. Sm	T.
262	Motacilla capensis (Linn.)	T., C.C., and N.
263	,, vidua, Sund	N.
264	,, longicauda, Rupp.	N.
265	Anthus caffer, Sund	T.
266	,, rufulus cinnamomeus, Rupp.	T. and O.F.S.
267	,, nicholsoni, Sharpe	T.
268	,, leucophrys, Vieill	C.C.
269	Macronyx capensis (Linn.)	T., N., C.C., and O.F.S.

270	Mirafra sabota, Smith	T.
271	,, chiniana, A. Sm	T.
272	,, rufipilea (Vieill.)	T.
273	,, africana, Smith	T.
274	Certhilauda semitorquata (Smith)	T. and N.
275	,, albofasciata, Laf	T. and O.F.S.
276	Pyrrhulauda verticalis (Smith)	T.
277	Calandrella conirostris (Sund.)	T.
278	,, cinerea (Gm.)	T. and N.
279	Phyllastrephus flaviventris (Smith)	N.
280	,, capensis, Sw	N. and C.C.
281	Andropadus importunus (Vieill.)	N. and C.C.
282	Pychnonotus capensis (Linn.)	C.C. and R.
283	,, nigricans (Vieill.)	N.
284	,, barbatus layardi, Gurn	T. and N.
285	Zosterops virens, Sund	N.
286	,, sundevalli, Hartl	T.
287	,, annulosa (Sw.)	T.
288	Anthreptes collaris (Vieill.)	N. and C.C.
289	Chalcomitra verreauxi (Smith)	C.C. and N.
290	,, amethystina (Shaw)	C.C. and N.
291	Cinnyris leucogaster, Vieill	T.
292	,, mariquensis microrhynchus, Shell.	P.E.A.
293	,, afer (Linn.)	T. and C.C.
294	,, chalybeus (Linn.)	C.C.
295	Nectarinia famosa (L.)	T. and N.
296	Promerops caffer (Linn.)	C.C.
297	Parus niger, Vieill.	C.C. and. N.
298	,, afer, Gm	T.
299	Parisoma subcaeruleum (Vieill.)	T.
300	Sphenoeacus natalensis, Shell	T. and N.
301	Cisticola aberrans (A. Sm.)	T.
302	,, natalensis (A. Sm.)	N. and T.
303	,, tinniens (Licht.)	T. and N.
304	,, lugubris, Rupp	N.
305	,, fulvicapilla (Vieill.)	C.C.
306	,, ruficapilla (A. Sm.)	N. and T.
307	Hemipteryx minutus (Gunning)	T.
308	Bradypterus brachypterus (Vieill.)	T.
309	,, babaeculus (Vieill.)	T.
310	Lusciniola gracilirostris (Hartl.)	T.
311	Acrocephalus baeticatus (Vieill.)	T. and N.
312	Prinia mystacea, Rupp	T. and C.C.
313	,, flavicans, Vieill	T.
314	,, maculosa (Bodd.)	C.C.
315	,, hypoxantha (Sharpe)	N.
316	Apalis thoracica (Shaw and Nod.)	T. and C.C.
317	,, neglecta (Alex.)	N.
318	Camaroptera brachyura (Vieill.)	C.C.

319	Sylvietta rufescens (Vieill.)	R.
320	,, whytei (Shell.)	P.E.A.
321	Eremomela flaviventris (Burch.)	T.
322	Crateropus jardinei, A. Sm.	T.
323	,, bicolor, Jard.	T.
324	Geocichla litsipsirupa (Smith)	T. and R.
325	Turdus cabanisi (Bp.), Cab.	T.
326	,, olivaceus, Linn.	C.C., N., and T.
327	,, libonyanus tropicalis, Ptrs.	P.E.A.
328	Monticola rupestris (Vieill.)	C.C.
329	,, explorator (Vieill.)	C.C.
330	,, brevipes, Strickl.	T.
331	Thamnolaea cinnamomeiventris (Lafr.)	T.
332	,, bifasciata (Temm.)	N. and C.C.
333	Myrmecocichla formicivora (Vieill.)	T.
334	Emarginata sinuata (Sund.)	C.C. and O.F.S.
335	Saxicola monticola (Vieill.)	T. and O.F.S.
336	,, pileata (Gm.)	C.C.
337	Pratincola torquata (Linn.)	T., N., and C.C.
338	Cossypha caffra (Linn.)	T., N., and C.C.
339	,, natalensis, Smith	N.
340	,, bicolor (Sparrm.)	C.C.
341	Erythropygia coryphaea (Less.)	C.C.
342	,, signata (Sund.)	C.C.
343	,, leucophrys (Vieill.)	C.C.
344	,, paena, Smith	T.
345	Tarsiger stellatus (Vieill.)	N.
346	Phoenicura familiaris galtoni (Strickl.)	T.
347	Butorides atricapillus (Afz.)	T. and P.E.A.
348	Cisticola terrestris (A. Sm.)	T. and N.

ORIGINAL TYPE SPECIMENS.

Name.	By whom Described.	By whom Collected.
Ardetta payesi ([Verr.] Hartl.)	W. L. Sclater	Austin Roberts.
Pseudogyps africanus (Salv.)	J. A. Bucknill	,,
Kaupifalco monogrammicus (Temm.)	,,	C. Wilde.
Glaucidium perlatum (Vieill.)	,,	Austin Roberts.
Alseonax adustus (Boie.)	,,	R. H. Ivy.
Lamprocolius phoenicopterus, var. bispecularis (Strickl.)	,,	P. Krantz and Austin Roberts.
Eremomela flaviventris (Burch.)	,,	Austin Roberts.
Turdus cabanisi (Bp.), Cab.	,,	,,
Tarsiger stellatus (Vieill.)	,,	,,
Phoenicura familiaris galtoni (Strickl.)	,,	,,

TYPE SPECIMENS NOT YET DESCRIBED.

Otis barrowi, J. E. Gr.	O. Staples.
Botaurus stellaris capensis (Schl.)	C. G. Davies.
Guttera edouardi (Hartl.)	Laid in captivity.
Falco ruficollis, Swains.	Austin Roberts.
Polioheirax semitorquatus (A. Sm.)	,,
Glaucidium capense (A. Sm.)	,,
Lybius zombae (Bodd.)	,,
Dendromus malherbei (Cass.)	,,
Dendropicos hartlaubi, Malh.	,,
Lophoceros neumanni, Rchw.	,,
,, nasutus epirhinus (Sund.)	F. Streeter.
Dryoscopus cubla hamatus, Hartl.	Austin Roberts.
Ploceus auricapillus, Sw.	Rev. N. and A. Roberts and E. M. Skea.
Estrilda erythronotos (Vieill.)	P. A. Krantz.
Vidua serena (Linn.)	Austin Roberts.
Poliospiza angolensis (Gm.)	,,
Serinus marshalli, Shell.	,,
Fringillaria reidi, Shell.	,,
Anthus caffer, Sund. (eggs described not this bird's)	,,
Anthus nicholsoni, Sharpe	,,
Mirafra chiniana, A. Sm.	,,
Zosterops sundevalli, Hartl.	,,
Bradypterus babaeculus (Vieill.)	,,
Sylvietta whytei (Shell.)	,,
Turdus libonyanus tropicalis, Ptrs.	,,
Monticola brevipes, Strickl.	,,

SPECIES NOT YET FULLY DESCRIBED.

Ortygospiza pusilla obscura (Neum.)	Austin Roberts and E. P. B. Arnold.
Accipiter minullus (Daud.)	F. Streeter.
Schizorhis concolor (Smith)	,,
Trachyphonus cafer (Vieill.)	,,
Dendromus bennetti (Smith)	P. A. Krantz.
Lephoceros leucomelas (Licht.)	F. Streeter.
Rhinopomastus cyanomelas (Vieill.)	Austin Roberts.
Apus apus (Linn.) (S. Africa)	Major R. Sparrow.
Hirundo atrocaerulea, Sund.	Austin Roberts.
Anaplectes rubriceps (Sund.)	F. Streeter.
Spermestes nigriceps, Cass.	Austin Roberts.
Calandrella conirostris (Sund.)	A. Duncan, N. and A. Roberts.
Cisticola fulvicapilla (Vieill.)	R. H. Ivy.
,, aberrans (A. Sm.)	Austin Roberts.
Hemipteryx minutus, Gun.	,,

A COMPARATIVE REVIEW OF THE AMPHIBIAN FAUNAS OF SOUTH AFRICA AND MADAGASCAR, WITH SOME SUGGESTIONS REGARDING THEIR FORMER LINES OF DISPERSAL.

By John Hewitt, B.A. (Cantab.).

Since the publication of the British Museum Catalogue of Batrachia Salientia several important additions have been made to our knowledge of the amphibian fauna of South Africa: these are incorporated in my paper on the South African Batrachia in the Records of the Albany Museum, Vol. 2, No. 3; and in a recent paper, Nouv. Archiv. du Museum d'Hist. Nat., Paris, 1909, Dr. F. Mocquard gives a complete list of the Batrachia of Madagascar. These lists seemed to offer a favourable opportunity for examining the known facts of distribution in terms of certain modern theories on the past configuration of the earth's surface. Those theories may be briefly stated as follows: From geological considerations it is believed that in Permian times a large Indo-oceanic continent connected together Australia, India, Madagascar, the Seychelles and southern Africa, and these connections persisted as late as the Upper Cretaceous period, but were broken up into islands at an early tertiary date: the derite connection between Australia and South Africa disappeared first, but Dr. Schönland believes, on botanical evidence, that it was still in existence during Lower Cretaceous times (see Trans. S. Afric. Phil. Soc., 18. 3., p. 321): the land connection between Madagascar and India persisted until the Eocene period, or perhaps considerably later as an archipelago, and there is abundant zoological evidence that the union between Madagascar and southern Africa is also of recent date, and indeed as a series of swamps may even have continued into the early Pliocene. On the other hand, from similar considerations it is hardly less certain that an extensive land connection has existed between the neotropical region and West Africa during the later secondary and early tertiary periods. Contemporaneous with these far-reaching land bridges across the Atlantic and Indian Oceans of the later secondary period, a great sea, perhaps dotted with islands, stretched north of the Equator from Panama by way of Africa as far as southern Asia, and thus the southern land-mass which included southern Africa and Madagascar was quite cut off from the palaearctic region. At that time the fauna of this large land-mass would have much in common throughout large areas, without being absolutely homogeneous, but after the separation of Madagascar and the formation of the African continent in its present shape, a new fauna coming from the palaearctic region arrived in South Africa, but was unable to reach Madagascar by this time an island. The present-day fauna of Madagascar should therefore be of particular interest, as it preserves, with but little admixture of foreign forms, the descendants of a fauna which was probably common to the whole of the southern Ethiopian region in early tertiary times: moreover, it is the only large portion of that vast area which has been thus isolated from the world. Unfortunately, however, there is a great lack of palaeontological data with which to supplement and check the deductions which we may draw from the present-day Malagasy fauna. The published lists of that fauna reveal the fact that the main groups of vertebrata are represented in Madagascar by an unusually small number of forms, and these are often of ancient type; for instance, amongst reptiles there are no Lacertidae, no Agamidae, and no Varanidae; there are no viperine nor proteroglyphous snakes, and of freshwater fish, according to Mr. Boulenger, there are only sixteen species. These facts seem to indicate that the larger Ethiopian area of the early tertiary period was correspondingly poor in present day types.

As regards the relationships of the Madagascar fauna of to-day, we know that it is for the most part Ethiopian and that also there are a few Indian and American types, but it is to be regretted that only in a few groups of animals have these various relationships been submitted to a thoroughly critical examination. A very suggestive inquiry into the affinities of the sub-fossil Lemuridae of Madagascar has been recently published by Dr. Standing (Trans. Zool. Soc., Vol. 18, No. 2). Some of his conclusions, which are of interest to us from our present point of view, are as follows: "In the main the affinities of the Malagasy fossils are with the primates of South America, but nevertheless there are certain features which find their closest analogy in various old-world forms"; "the incisors of Archaeolemur (of Madagascar) are almost identical with those of various African genera"; and "the various genera of the Lemuridae and the new-world monkeys seem to be survivals of the primate stock formerly inhabiting the ancient southern land-mass which included South America, Madagascar and a part at least of South Africa and India": and he concludes that in giving rise to the Malagasy lemurs, this early primate stock, as a result of isolation being removed from competition with the dominant mammalian groups which spread over other parts of the world, experienced an arrest of brain development and perhaps even a retrogressive evolution: and lastly, it is no longer possible to separate primates into the two sub-orders Anthropoidea and Lemuroidea. In the same work Dr. Elliot Smith writes: "the brain features of the Prosimiae are very uniform", and the larger species of Galaginae have a type of brain almost identical with that of the Lemuridae, whilst Garnett's Galago and Loris have many brain features in common"; and further "in Propithecus, Lemur, Loris, Tarsius, the Hapalidae, and the Cebidae there is a complete series of transitional stages leading up to the conditions met with in the old-world apes and man". This investigation clearly reveals the fundamental affinity of the Lemuridae with the American monkeys, but it is important to note that there is a still closer affinity between certain elements of the Malagasy and South African faunas as shown in the sub-family Galaginae.

The case of the Madagascar boine snakes, which are generally supposed to be of pronounced American relationship, has been dealt with by Mr. Beddard in the Proceedings of the Zoological Society, with results which are somewhat unexpected: for, he says, there are important anatomical differences between the Madagascar species of Corallus and Pelophilus and the American snakes which have been referred to the same genera, the former being in some respects more in agreement with the old-world pythons, and he considers that it is not now desirable to subdivide the Boidae into the usually accepted groups of Boinae and Pythoninae. This case is an illustration of the obvious fact that it is unsafe to gauge generic relationships by means of superficial characters.

The only important facts to be added to the known data concerning the South African frogs relate to the genera Heleophryne and Cacosternum: the former, as I have shown (Annals Transvaal Museum, Vol. 2, p. 45), really belongs to the Cystignathidae, and the latter, which was first assigned to the Ranidae and more recently to the Engystomatidae, appears to me to be more correctly placed in the Dyscophidae (or sub-family Dyscophinae of Gadow), as the upper jaw is undoubtedly provided with teeth.

The amphibian faunas of South Africa and Madagascar are composed as follows:—

	SOUTH AFRICA.	MADAGASCAR.
Aglossa	Xenopus 1	—
Bufonidae	Bufo 8	—
Cystignathidae	Heleophryne 2	—
Ranidae	Rana 15, Chiromantis 1, Cassina 1, Hylambates 3, Rappia 9, Megalixalus 2, Arthroleptis 2, Phrynobatrachus 1	Rana 2, Rhacophorus 21, Rappia 6, Megalixalus 3, Mantidactylus 23, Arthroleptis 1.
Ranidae, sub-family *Dendrobatinae*	—	Two peculiar genera.
Engystomatidae, sub-family *Engystomatinae*	Hemisus 2, Breviceps 5, Phrynomantis 1	Calophrynus and three peculiar genera.
Engystomatidae, sub-family *Dyscophinae*	Cacosternum 1	Nine peculiar genera.

Aglossa.

Xenopus laevis.—The genus ranges through tropical and South Africa, but is absent from North Africa: the genus Pipa of the Guianas is closely related to Xenopus, and Hymenochirus of Equatorial Africa is stated to be in some respects intermediate between the two genera. As this sub-order is absent from Madagascar and the oriental region it would seem likely that the original home was in the neotropical region and that Xenopus is comparatively new to Africa.

Phaneroglossa.

Bufonidae.—There are about seven species of Bufo in the South African region, the commonest being *B. regularis*, which occurs throughout the whole of Africa with the exception of Barbary: probably the only species peculiar to South Africa are angusticeps, vertebralis, and granti, the latter perhaps only a variety of angusticeps. The genus is cosmopolitan with the exception of Madagascar and Australia, from which latter fact Gadow concludes that the original centre of the genus Bufo was not in Notogaea,* though the neotropical region is at the present day richest in number of species: however this may be, we are safe in regarding the genus as comparatively new to Africa on account of its absence from Madagascar and from the fact that Africa has no peculiar genera of Bufonidae. The only other Bufonid genus occurring in Africa is Nectophryne of the Cameroons, Gaboon, and East Africa, the same genus having a number of representatives in southern Asia, especially Borneo. The other genera of the Bufonidae are mainly distributed between the neotropical region and Australia, and, though there may be some doubt about the place of origin of the genus Bufo, it is very probable that the general Bufonid stock arose in Notogaea. I believe therefore that the genera Bufo and Nectophryne arrived in Africa at a comparatively recent date, travelling from the neotropical region via West Africa: that this was the direction of the migration, rather than from east to west, I assume from the fact of the absence of Bufo in the Australian region. The distribution of these genera suggests that they arrived in the Ethiopian region at a time when the Indo-Oceanic continent had already been reduced by the northwardly advancing ocean to a narrow strip extending from East Africa to Asia, the island of Madagascar being by this time separated from its continent.

Cystignathidae.

As I have already stated, the genus Heleophryne of Mr. W. L. Sclater is really a Cystignathid. This family is otherwise confined to Australia and South America, and on the whole I think the South African genus is more closely related to the Australian section: this conclusion is mainly arrived at from consideration of the somewhat dilated sacral diapophyses, though in its Y-shaped terminal phalanges it is at once distinguished from all Australian genera. But to explain its occurrence at the southern extremity of Africa is no simple matter. for, whilst its structural peculiarities indicate that it is not an accidental immigrant of very recent date, it is believed that the Anura are a comparatively newly developed group of animals—Dr. Gadow says that the earliest known fossils are scarcely older than the Middle Eocene—whereas the direct connection of South Africa with Australia was probably severed at a very early date, at any rate not persisting beyond Cretaceous times. However, as regards the age of the Anura, an estimate based only on the palaeontological evidence may be very unreliable considering the extreme scantiness of the record, and therefore our conceptions of their antiquity must be based largely on the facts of present-day distribution viewed in the light of our knowledge on the past changes of land and sea over the earth's surface: this is not a circular argument, as the evidence for these latter hypotheses is based on sound geological facts. The very fact of the occurrence of the two main branches of the Cystignathidae in Australia and South America respectively is sufficient to imply the existence of this family in Cretaceous times, for according to all accounts the land connections between those two countries must have terminated by early tertiary times at the latest. At the same time we must add that the Cystignathidae is perhaps the oldest family of the Anura.

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* The terms Notogaea and Arctogaea (southern and northern world) are here employed in the same sense as by Gadow in the Cambridge "Natural History", Notogaea comprising the Australian and neotropical regions of Sclater.

Again, it is obvious that the immigration of Australian types into southern Africa can be dated less remotely the more northward the place of entry. Now, even the present-day distribution of this genus is very imperfectly known: it was first taken in the Stellenbosch neighbourhood and recently at Knysna, but as apparently it is of purely arboreal habit it must easily escape notice, and we may reasonably expect that it will prove to have a much wider range: very likely the genus will be found to occur in the forest region of the whole coastal strip of Cape Province at least. Nevertheless, it should be mentioned that from analogy with the plants, the western portion of Cape Province is just the locality where we might have expected to meet with Australian types, for Dr. Schönland says: "It is certainly most extraordinary that wherever we find the closest agreement between the floras of the two countries (South Africa and Australasia), it is between the boxed-up flora of the Cape Province (of botanists, i.e. south-west Cape Colony) and the flora of Australia, chiefly west and south-west Australia, and when we consider that this connection exists in widely separated orders these facts become all the more wonderful." But even from a botanical point of view it seems necessary to postulate a former wider distribution in South Africa for this particular flora, and in the same paper we read: "A former eastward extension (of the typical Cape flora) is certainly demanded by our theory . . .; we know that even now many outliers of the typical Cape flora reach far east, and their number would probably be much greater if the tropical African flora did not appear as a formidable competitor in the coast regions." In this connection I may remark that the various botanical areas of South Africa have little significance from the point of view of vertebrate zoology: it is quite true indeed that the peculiar South African element is specially concentrated in south-western Cape Province, but thence it is diffused all over southern Africa, the Congo basin excepted, and only two areas, an eastern and a western separated by the Drakensberg Range, have any claim even to sub-regional rank, though within a sub-region the several species of a genus may range themselves according to the various environmental conditions. Amongst the South African reptiles perhaps the most striking case of Australian relationship is that of the genus Oedura, which is confined to the South African and Australian regions. The distribution of our species is as follows: *O. africana*,* Damaraland, eastern Cape Colony, Natal: *O. nivaria*, first taken in Natal at the highest point of the Drakensberg Range and more recently in the Pirie Bush (F. A. O. Pym). The case of Oedura will therefore favour the supposition I have made for an extension in a north-easterly direction of the distribution area of Heleophryne. Lastly, in the arboreal habit of this frog we have another possible clue to the problem, for granting that in Upper Cretaceous times the direct connection between South Africa and Australia had largely disappeared, yet stepping-stones in the form of a chain of sinking islands affording opportunity for the dispersal of some arboreal creatures only, may still have existed.

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* The Damaraland record is open to suspicion: nivaria is probably a synonym of africana.

Ranidae.

The whole family of Ranidae is distributed as follows:—Ceratobatrachus, which has teeth in both jaws, is known only from the Solomon Islands: the Raninae, which have teeth only in the upper jaw, belong almost entirely to Arctogaea, and except for the genus Rana, which ranges throughout the whole region, are limited mainly to tropical and sub-tropical areas: the Dendrobatinae, which are characterized by an entire absence of teeth, occur in Madagascar, Gabun, and the neotropical region.

The genera of Raninae (Ranidae of many authors) fall into two sections according to the presence or absence of supernumerary digital phalanges, the former section comprising the following genera:—Chiromantis, Cassina, and Hylambates, which belong to tropical and South Africa, Rothschildia of Abyssinia, Rappia and Megalixalus occurring in tropical and South Africa and Madagascar, with an odd species of the latter genus in the Seychelles, Rhacophorus of Madagascar, India, Malaya, and Japan, Mantidactylus of Madagascar, Ixalus of India and Malaya, Nyctixalus of East Indies, Phrynoderma of Burmah, and Chirixalus of the Karin Hills. Dr. Gadow says " it is doubtful if all these genera are thereby more nearly related to each other than to the rest of the Raninae ", but as the African members—with the possible exception of Chiromantis—seem to be more closely related to each other than to Rana, and as the distribution of the whole section is very suggestive of a former continuity through the Indo-Oceanic continent, I am regarding them as a natural group, and, as will be explained later, I suspect that this is the older section of the family. The other section of the Ranidae, comprising genera which are without supernumerary digital phalanges, occurs throughout Arctogaea and the tropics of both worlds, and has the following genera in South Africa:—Rana, Arthroleptis, and Phrynobatrachus, in addition to which there are one or two monotypic genera in tropical Africa, for instance, Phrynopsis of Mozambique: these genera, with the exception of Rana with its fifteen species in South Africa out of a total of about 150 species which range throughout the whole tropical and temperate Arctogaea, hardly penetrating into Notogaea, and Arthroleptis which has an odd species in Nossi Bé (with a generic ally in the Seychelles) are peculiar to the African continent: on the other hand, Madagascar has no peculiar genus belonging to this section, and indeed its only representatives are two species of Rana—one of them being the *R. mascariensis*, widely distributed in tropical and South Africa—and the single species of Arthroleptis, which, however, appears to be confined to Nossi Bé. It is possible therefore that the Madagascar representatives of this section are merely straggling immigrants of quite recent date, and we can be sure that this island was outside the area of evolution of the genus Rana and the various genera which are minus the supernumerary phalanges. But to return to the other section, this is strongly developed in Madagascar, and although three out of the four genera occur elsewhere, the whole section is no doubt truly endemic there, as indicated by the large peculiar genus Mantidactylus and the marked development of the genus Rhacophorus. Two of the genera Rappia and Megalixalus are common to South Africa and Madagascar, whilst the genus Rhacophorus has many species both in Madagascar and the Indian region, but these facts do not necessarily imply a specially great antiquity for such genera, as, being of arboreal habit, like the great majority of the members of the same section, they would no doubt be able to effect their continuous dispersal during the greater part of the time when the direct land connections were dissolving and under conditions which would altogether isolate terrestrial or purely aquatic frogs which unanimously abhor salt water. Somewhat parallel instances amongst mammals are known, and Dr. Standing explains the occurrence in Madagascar of such late forms as pigs and hippopotami, and the absence of other groups which are known to have existed on the African continent at an earlier date, on the hypothesis that Madagascar and Africa have remained in connection up to a very late tertiary date by means of a low-lying isthmus covered with dense jungle and intersected by swampy tracts: this would offer but little obstacle to wild pig, but would be a complete barrier to almost all other mammals except purely arboreal forms.

As Dr. Gadow has pointed out, the entire sub-family of Raninae is in its fulness and diversity of development essentially palaeotropical; from which we may infer that its centre of origin was the great Indo-Oceanic continent, and I believe that the arboreal section of Madagascar and South Africa represents the original stock without much modification—but this is a point for anatomical investigation. As already mentioned, the African members of the other section, the genus Rana excepted, are all peculiar to the region so that they were probably developed in this continent: several of them have near allies in eastern Asia, e.g. Phrynobatrachus and Arthroleptis appear to be closely related to Oreobatrachus from Mount Kina Balu in Borneo, whilst Cornufer of Austro-Malaya and Polynesia has a very near ally in Petropedetes of the Cameroons and Gabun. The land connections which are implied in these relationships were presumably in existence subsequent to the isolation of the main island of Madagascar. It should be added also that there are a few Ranid genera in tropical South America and Central America: this assembly seems to be a natural one, but its relationships are unknown to me. I judge from the distribution that they come from the old world by way of the transatlantic bridge.

As regards the genus Rana, its distribution suggests an old-world origin, and in the new world it appears likely that it travelled from the North to South America: if we suppose that it had its origin in Africa, it must be understood that this could only have happened subsequent to the dissolution of the transatlantic land bridge.

Probably the most distinctive section of this large and widely dispersed genus is that which was formerly included under the generic name

Pyxicephalus (*R. adspersa, delalandi, natalensis*, etc.,) and it is a noteworthy fact that this section (as understood by Nieden) is confined to tropical and South Africa, with an odd species in Madagascar, from which we may conclude that Pyxicephalus really is endemic in this region. Although in some of its characters it is no doubt very specialized, yet on the whole I think Pyxicephalus is more primitive than the ordinary type of Rana: for instance, whereas in Rana the metatarsals are separated by web, this is not the case in Pyxicephalus, the condition in Rana being no doubt a secondary adaptation character. There is therefore some justification for the supposition that the genus Rana arose on the African continent. Fossil Ranidae are recorded from the Eocene of India (Oxylossus) and from the lower Miocene of Germany (Rana).

The sub-family Dendrobatinae (Dendrobatidae of some authors) has two genera in Madagascar, Nossi Bé and Reunion, one in French Congo, and one in South America. They appear to differ from Raninae only in the absence of teeth, and Gadow therefore questions if they really constitute a natural group. In the absence of certain evidence on this point we cannot make use of their distribution data: it is important to note, however, that parallel facts of distribution are known in other groups of vertebrates.

Engystomatidae.

The most typical section of this family is the sub-family Engystomatinae. The South African genera Hemisus and Breviceps are confined to tropical and South Africa whilst the third genus, Phrynomantis, has also a representative in the island of Amboina. It is worthy of note that in Africa this genus properly belongs to the tropical region, ranging from Gold Coast and Angola to German East Africa, and extending southwards into the sub-tropical portions of our area, but not reaching Cape Province (Phrynomantis occurs at Kimberley, but Miss Wilman believes that it is an accidental introduction along with mine timber.) Madagascar has four genera, of which three are peculiar, whilst the fourth, Calophrynus, has other species in Borneo, Burmah, and South China. The whole sub-family is distributed as follows: Tropical and South America, seven genera; Africa three; Madagascar four; India and Malay region, especially New Guinea, thirteen. The inter-relationships of these various genera are unknown to me. The sub-family Dyscophinae includes about ten genera, which are all confined to Madagascar, with the exception of Calluella in Burmah, Colpoglossus in Borneo, and Cacosternum in Africa. The genus Cacosternum differs, however, from all other Dyscophinae except Anodontohyla in the absence of palatine teeth, and as the precoracoids also are absent, it must be counted as a degenerate member of the sub-family and a connecting link with the Engystomatinae. As this sub-family constitutes the more primitive section of the Engystomatidae, we may surmise that the original home of the family was in the Indo-Oceanic region, an assumption which is in agreement with the present-day distribution of the Engystomatinae: and seeing that these genera as a whole are slow of movement, their more extended distribution in South America would seem to indicate that the Engystomatinae are not so recent as the Raninae.

We may now very briefly mention the distribution of those families of Anura which do not occur in South Africa nor in Madagascar.

The Hylidae have their headquarters in South America, but they occur also in North America and in Papuasia, whilst a few stragglers of the genus Hyla extend from America throughout the palearctic region, southwards into southern China and northern India, and though absent from the Malay region (except New Guinea), there are several species of Hyla in Australia. It appears therefore that, roughly speaking, Hylidae occur in every habitable part of the globe excepting the great Indo-Oceanic region as it was immediately subsequent to its separation from Australia. The distribution records suggest, that in passing between the old and new worlds the genera Hyla and Rana made use of the same land connections (probably across Bering Straits), but travelled in opposite directions.

The Discoglossidae occur in the palaearctic region, North America, and in New Zealand, and are recorded from middle and upper Miocene of Europe, whilst the Pelobatidae occur in North America, Europe, India, Ceylon, Malaya, and New Guinea.

The distribution of the Apoda is particularly interesting from our present point of view. These worm-like creatures, which are entirely restricted to a burrowing life in damp ground, must have exceedingly limited opportunities for dispersal. Major Alcock (A.M.N.H., 1904, p. 267) gives the following list:—Out of a total of eighteen genera, tropical America has nine genera (seven peculiar) comprised in twenty-eight species, West Africa has four genera (two peculiar) with five species, East Africa has five genera (four peculiar) with five species, the Seychelles have three genera (two peculiar) with four species, and there are four genera (two peculiar) comprised in six species in India and South-East Asia. One genus, Dermophis, is common to tropical America, West and East Africa, the genus Hypogeophis is common to East Africa and the Seychelles, Herpele occurs in tropical America, West Africa, and Cachar (India), and the genus Uraeotyphlus is known only from Gabun and Malabar. It appears that in Africa the Apoda are confined to a broad belt of country stretching from east to west in the Equatorial region, and are absent altogether from South Africa, Angola, and Mozambique. Considering the preponderance of genera and species in the neotropical region it seems highly probable that this was the original home of the group and that like Xenopus, Bufo, and Nectophryne, the Apoda reached the Ethiopian region subsequent to the separation of Madagascar: and it is evident that after Madagascar had attained an insular position there still remained for some time a land-bridge stretching from East Africa to the Indian region and including the Seychelles.

In the Proc. Zool. Soc. for 1905, p. 191, there is a very interesting paper by Dr. Gadow on the Mexican Reptiles and Amphibia, where he gives an outline of the present and past distribution of the Anura families in that part of the world. This has an important bearing on our present question, and I therefore give a brief summary of some of the salient facts therein stated. During Cretaceous times Central America and Mexico were covered by sea, and even by the end of the Eocene period North and South America were still completely separated: during Miocene times, however, extensive land connections stretched between North and South America, and the Greater Antilles were united with Mexico and Central America: but at the end of the Miocene the geographical relations of that part of the world were much the same as to-day, and no profound changes have occurred since. It follows therefore that some very important deductions can be made by comparison of the Mexican fauna with that of the Antilles. The facts are:—

Cystignathidae, extending from their South American centre into Mexico and the Antilles, but not occurring in the United States.

Hylidae, well represented in South America, Mexico, and Antilles, and extending throughout North America.

Bufonidae: Central America and Mexico are one of the centres of this family, and it extends into the Antilles.

Engystomatidae, well represented in South America, occurring in Mexico, a few in North America, but none in the Antilles.

Ranidae: a number of peculiar genera in the north-west portion of South America, but in Mexico and North America only the genus Rana occurs and there are none in the Antilles.

Pelobatidae, extending from North America into Mexico, but not reaching Central America nor the Antilles.

Apoda: they occur in South America and in Mexico, but are not known from the Antilles.

From consideration of the Ranidae and Engystomatidae it will be seen that the transatlantic bridge could not have included the Greater Antilles, and in fact it must have been appreciably south of that region. And if we suppose that the transatlantic connection as a complete bridge came to an end at an earlier date than the Antillean land connection, at the same time making due allowance for the great length of the former, it can easily be shown that all these facts of distribution are in accordance with the speculations made in this paper concerning the place of origin and the migrations of the various Anura families. The absence of the Ranidae and Engystomatidae from the Antilles is quite comprehensible when we regard them as old-world families which crossed over to the neotropical region at a time when the land-bridge was just beginning to give way, and when eventually they had travelled northwards as far as the Antillean bridge this was no longer complete. That Bufonidae, Hylidae, and Cystignathidae occur in the Antilles is what we should expect of groups which are American in origin, but whereas the Bufonidae have been able to avail themselves of the transatlantic bridge, this is not the case with the other two families: the explanation no doubt lies in the fact that the Cystignathidae and probably also the Hylidae had their centre of origin far south, perhaps in the great land area lying between Australasia and South America, and by the time they had advanced northwards into the transatlantic bridge, this had begun to break up, whereas in the case of the Bufonidae the American terminus of that bridge was probably nearer their centre of origin.

The various tertiary land connections of the Ethiopian region as indicated in this paper do not furnish a complete explanation of all the distribution data: it is difficult to understand, for instance, why such widespreading forms as Nectophryne and the Apoda have not extended further southwards in Africa and why the Dendrobatidae have such a disconnected distribution. To explain the paucity in Madagascar of early African mammals, Tullberg (whose paper I have not actually seen) suggested that the east part of Africa, along with Madagascar, had been separated by an arm of sea from the main south-western African mass, and not until after the isolation of Madagascar (about late Oligocene) were the two portions of Africa united, at which time East Africa was probably united to South-West Asia by a continuous land-bridge along which the Proboscidea reached India. There is much to be said in favour of this view if we include in the eastern section of Eocene times the whole of Sclater's Cape Province with Madagascar, as it well explains the distinctness of that Province and its fundamental relationships with Madagascar. In such case there may have been various transitory connections between the separated areas, some of which would be the means of introducing certain American types which were shortly afterwards isolated in Madagascar.

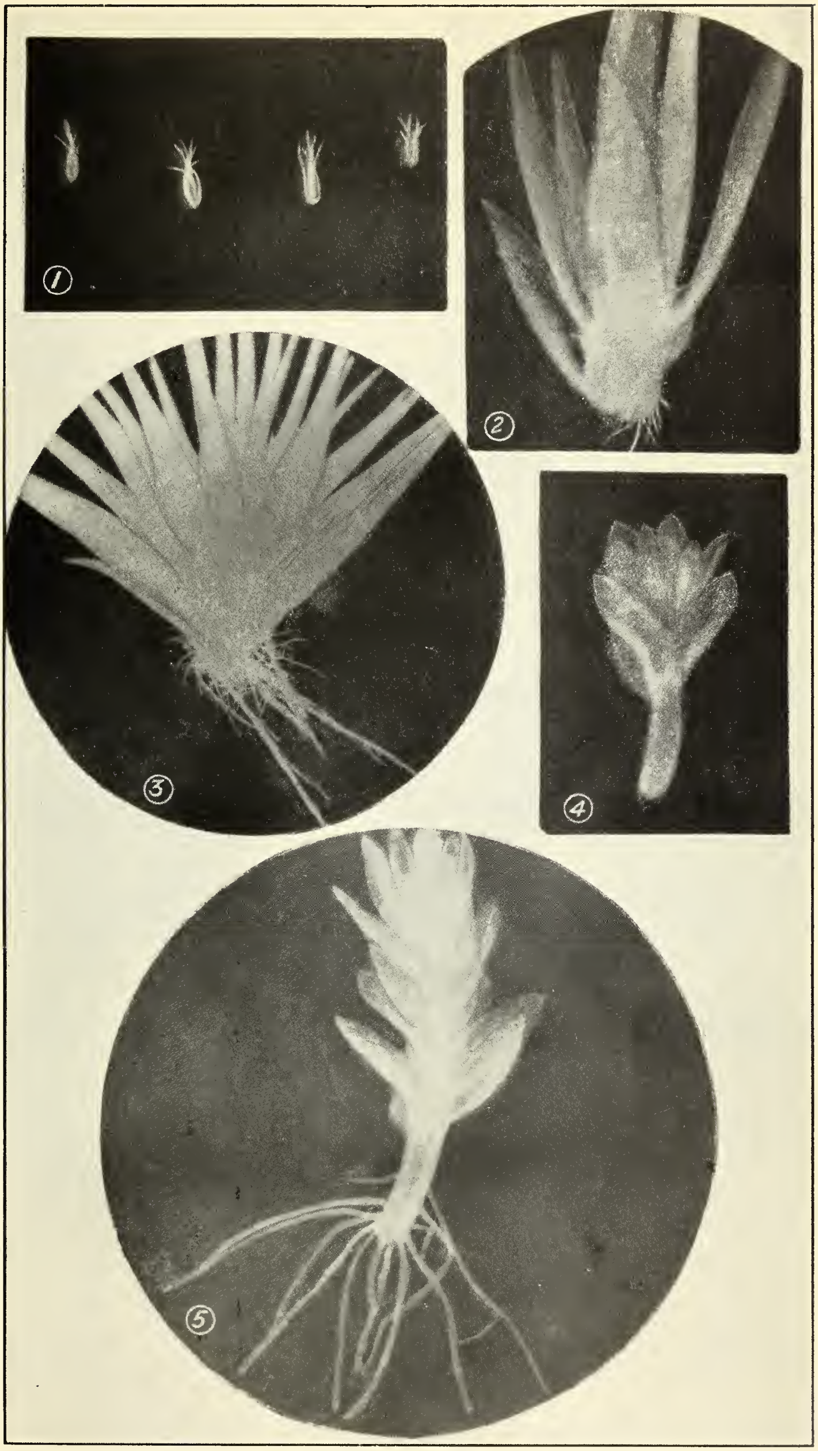
In concluding this short paper, it must be admitted that the kind of evidence that is required to properly establish these hypotheses is altogether lacking, in the almost complete absence of fossil forms : nor do we possess the whole evidence of comparative anatomy, for our judgments of generic relationships are based upon the more easily ascertained and superficial characters, and the data for a genetic arrangement of the genera are still wanting. Mocquard points out that in the Arcifera, especially the Hylidae, there are two sections parallel to those of the Raninae, so that it is even possible, though I think not probable, that our whole classificatory arrangement will have to be altered accordingly. The available facts certainly show how unsatisfactory must be any rigid arrangement of the world's surface into zoological regions, seeing that the fauna of any large area is a heterogeneous assembly of species which have varied origin and history.

A NEW METHOD OF ASEXUAL PROPAGATION IN MOSSES.

By Horace A. Wager, A.R.C.S.,
Lecturer in Biology at the Transvaal University College, Pretoria.

Campylopus trichodes is a moss growing in great abundance on the top of Table Mountain, Capetown. It is found in cushion-like patches varying in size from thin strips growing in the cracks of rocks to large patches on the ground. I found on nearly every patch examined numbers of small loose pieces of what was evidently the same moss. These were all about the same size and of the same appearance. Each piece has a small stem of about 2 mm. in length and several leaves. When dry the leaves are yellowish and are screwed up, but with the apices spreading. A micro-photograph of some, magnified about two and a half times, is shown in Plate IV, Fig. 1. When placed on damp soil the leaves very soon absorb water and spread out, whilst some time later rhizoids make their appearance from the base of the stem, so that a new moss plant is formed. One of these, with spreading leaves and rhizoids just developing, is shown in Fig. 2. Each piece thus appears to be a form of bulbil, but there is here no storage of food or water as in ordinary bulbils for initial growth until green leaves appear. In the case of these moss bulbils this is overcome by the readiness with which the leaves absorb water and assume their nutritive function. Dissemination is arranged for by the bulbils being light and at the same time the spreading of the apical portions of the leaves have a peculiar significance. If a bulbil is dropped from a height it invariably drops with the stem part downwards, the whole bulbil acting as a kind of parachute. Thus if blown about by the wind the bulbils will drop in a position ready to commence growth, other conditions being favourable. I brought some from Table Mountain to Pretoria, keeping them in an envelope for three weeks. They then grew quite easily when placed on damp soil under glass. The rhizoids produced first are brown, with oblique septa, and these penetrate the soil, but further protonemal filaments can probably be produced on which buds will develop as in other mosses. The ease with which protonemal filaments can be made to develop from almost any part of the gametophyte, e.g. severed parts, is well known, but this cannot be regarded as a means available by the plant for reproduction except in case of accident, any more than cuttings of rose trees could be cited as a means of reproduction for a rose tree. Of course the formation of gemmae, whether on the leaves or in cups, is specially for the purpose of reproduction. The formation of these moss bulbils is also of the same nature. In every case it is the terminal portion of the stem that develops into the bulbil and not lateral branches. Special provision in the way of the formation of an absciss layer is necessary in order to discard the bulbil. Lateral branches are in many cases given off afterwards below this absciss layer, so that the plant is provided with more leafy axes.

PLATE IV



GERMINATION OF MOSS BULBILS.

So far as I have been able to observe this formation of bulbils goes on in the moss where it is exposed to great variation in drought and moisture, and where the wet periods are not of sufficient duration to allow of the sexual process taking place. I have not yet found the moss in fruit, although I have now found it in many different localities, always in exposed situations, and nearly always with the formation of bulbils.

I have also found similar bulbils on the following mosses:—

Polytrichum, sp.: This moss grows in tufts in the cracks and on the edges of exposed rocks. It has normal stems about half an inch long and rather short leaves, with long, hyaline dentate points, giving the whole tuft a whitish appearance. The bulbils are formed fairly plentifully, and rhizoids are freely formed. In this case the bulbils are usually developed from lateral branches, several occurring on the same stem, and near the top, giving some plants a rosette appearance. The micro-photograph, Fig. 3, is from a bulbil found quite close to a tuft, and which had just commenced to develop.

Bartramia, sp., found growing in patches on dripping, rocky banks. On the surface of tiny, quiet pools I found small masses of what appeared to be some water plant. Each patch, however, was found to consist of large numbers of tiny bulbils, mostly under a millimetre in length. In most cases development had already commenced, and the bulbils were densely matted together by prolific outgrowths of rhizoids. The patches evidently eventually got to the side, and, becoming stranded on the mud, formed cushions of the moss similar to those found in the immediate neighbourhood. Other bulbils or patches would be carried by the trickling water to other places, and thus get disseminated. A peculiarity of this bulbil is that the lower portion of the small stem is usually bare, as shown in Fig. 4, which is a reproduction of a bulbil which had not commenced to develop. Fig. 5 is of a similar bulbil with an outgrowth of rhizoids.

I have recently found bulbils on another moss which has not yet been identified. It is evidently allied to *Bryum argenteum*, having closely imbricated leaves, but much smaller. The bulbils are very small, and are scattered on the top of the cushion-like tufts of the moss.

In England a common moss which usually produces bulbils is *Dicranum heteromallum*.

Specimens of these mosses with bulbils are in the Herbarium of the Transvaal Museum, Pretoria.

Explanation of Figures (Plate IV).

Fig. 1. Bulbils from *Campylopus trichodes*, magnified about two and a half times in dry condition, showing spreading points of the leaves.

Fig. 2, Bulbils of *Campylopus*, showing spreading leaves and small development of rhizoids.

Fig. 3. Bulbil of *polytrichum*, sp., showing development.

Fig. 4. Bulbil of *bartramia*, sp., showing condition when just discarded.

Fig. 5. Bulbil of *bartramia*, sp., showing development of rhizoids from base of stem.

RECORDS OF SOUTH AFRICAN LACERTILIA AND AMPHIBIA.

ADDENDA AND CORRIGENDA.

By JOHN HEWITT, B.A., Cantab., Director of Albany Museum.

THIS paper includes some new records of lizards and frogs and a few corrections on my previous records (Vol. II, pp. 29 and 77, of these Annals, and Records Albany Museum, Vol. II, p. 190). There has recently been published important papers dealing with the South African Fauna by Dr. Werner on the collections of Schultze's expedition in German South-West Africa (Schultze, Forschungreise in Südafrika, IV), and by Mr. Boulenger on the collections of the South African Museum (Annals South African Museum, Vol. V, pt. 9). Some of the records given in the latter paper appear to be incorrect, and therefore I venture to make certain alternative suggestions which may prevent the perpetuation of possible error and at any rate should direct the attention of other workers to some of the problems of distribution peculiar to this sub-continent. Of course, it is not to be expected that the more delicate problems of distribution in South Africa will be solved for us through lists compiled by the authorities in Europe; but it is of importance to us that the publications of an eminent herpetologist should not be marred by the inclusion of doubtful locality data.

A rather less serious source of confusion arises from the fact that every authority has his own value for the terms "species" and "variety", with the result that we are presented with many conflicting opinions; but not until the work is undertaken by men who have an intimate knowledge of the local conditions and who, with representative collections at their disposal, will concentrate their attention on the South African fauna as such, can we hope to have a correct valuation of the various species and their varieties.

One of the outstanding facts of vertebrate distribution in this region is that in passing from east to west there is a very considerable change of fauna, the species of Natal and eastern Cape Province being represented in western Cape Province by different species of the same genera; in other cases western genera do not occur at all in eastern Cape Province, and vice versa. The questions arise, what are the boundary lines? are they conterminous with physical or geographical barriers? and are there any intermediates or do the specific areas overlap? I may add that for such problems the lizards and tortoises (see Dr. Duerden in Report S. A. A. S., 1906, p. 178) * are quite the most suitable of all vertebrates, as their scale characters are so easily defined; frogs offer special difficulties, as they possess no clearly marked specific characters. It is absolutely essential that critical determinations should be based only

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* This suggestive paper can be commended to all students of geographical distribution.

on adult specimens, and it is desirable that each locality should be represented by more than one specimen.

Of late years the various authors have created many new species on insufficient grounds: a goodly proportion of these have already found their way into the synonymy, and I have a few more reductions to make here.

LACERTILIA.

Ptenopus garrulus Smith.—Rietfontein, Gordonia (H. Drew).

Palmatogecko rangei Anders.—Dr. Werner gives some excellent figures of this gecko: misprinted Pelmatogecko in Annals South African Museum.

Oedura africana Boul. (synonym, *O. nivaria* Boul.).—The position of the nostril relative to the rostral scute is the only character which separates the two forms. It is certainly an easily ascertained character, but probably not of specific value. According to the descriptions, africana has the nostril between the rostral and three nasals, the upper of which is large and forms a suture with its fellow; nivaria has the nostril between four or five scales, the upper largest and separated from its fellow by a granule, and the Pirie specimen (F. A. O. Pym) combines these characters, for the nostril lies between the rostral, the first labial and three nasals, the anterior nasal, which is largest, being separated from its fellow by a granule.

Judging from the published records, the two forms certainly have an overlapping distribution in eastern Cape Province and Natal, and it is significant that Durban is credited with both species (Roux and Boulenger). The original record of africana from Damaraland must, I think, be viewed with suspicion, for it has never been taken in that region by the German explorers and, moreover, the type specimen was taken from a snake, *Pythonodipsas carinata* Günth., which also is not otherwise known from the western portion of South Africa.

Lygodactylus capensis Smith.—Potchefstroom (W. Moore), Pongola (Trans. Mus.), Mafeking (Kimberley Mus.). Werner records it from Keetmanshoop in German South-West Africa.

Lygodactylus ocellatus Roux.—Athol, Ermelo District (Miss M. Forbes).

Pachydactylus bibroni Smith.—According to Dr. Werner the following are local races of this species: *P. laevigatus* Fisch., with smooth dorsal tubercles; *P. bibroni* sens. strict., with strongly keeled or trihedral dorsal tubercles; *P. stellatus* Wern., with radially keeled dorsal tubercles; *P. boulengeri* Torn. of East Africa. But it seems to me doubtful if all these are entitled to rank even as geographical varieties, seeing that there is considerable variation as regards the dorsal tubercles in specimens from limited areas. I have seen typical specimens of stellatus from Rietfontein, Gordonia (H. Drew).

Our examples of bibroni show some variation in the arrangement of the scales bordering the nostril, and the anterior nasals may be broadly in contact or completely separated. The general distribution cited by Mr. Boulenger for this species requires a little qualification in view of the fact that the species is unknown from Natal and Zululand, though it occurs in the Barberton District.

Pachydactylus capensis Smith.—Dr. Werner regards the following as local forms of this species: *P. capensis* sens. strict., with weakly keeled dorsal tubercles; *P. formosus*, with strongly keeled dorsal tubercles and four to five subdigital lamellae; *P. fasciatus*, with strongly keeled dorsal tubercles and six to nine subdigital lamellae. He allows *mentomarginatus* Smith and *weberi* Roux to rank as distinct species. Now mentomarginatus was reduced both by Mr. Boulenger and myself as a synonym of formosus; and the author of weberi himself stated that this species comes between capensis and formosus. In my paper I pointed out the resemblance between weberi and fasciatus. As regards *affinis* Boul., it was stated by Roux (Zool. Jahrb. 25, p. 410) that the author of that species had agreed with him to sink affinis as a synonym of formosus. It is now my opinion that all these so-called species are nothing more than forms of capensis, for the characters by which they are distinguished—degree of keeling of dorsal scales, arrangement of nasal scutes—are so variable that it is undesirable to give them either individually or collectively specific value; it is certain, however, that several of these forms may justly rank as geographical varieties separated by colour pattern and by loosely defined structural differences. The var. formosus has a distinctive pattern and may also be separated from the var. capensis by the dorsal scaling and according to Dr. Werner by the shape of the symphisial scute, which is longer than that of capensis; the var. affinis appears to be distinguished from capensis proper through the head scaling only; the var. fasciatus has a characteristic pattern and has rather more subdigital lamellae than the typical capensis: weberi is only distinct in the arrangement of its nasal scutes, but as it was described from four specimens we may presume that the same arrangement was common to all, though Dr. Roux does not expressly state thus.

The confusion that exists on these matters can be guessed at by comparing together the various locality records. Capensis and affinis are both recorded (Boulenger) from the same collector in Southern Rhodesia, all previous records having been given as affinis only; both capensis and formosus are assigned to Port Elizabeth, the latter being quite new for the coastal districts of eastern Cape Colony; Schultze's number 742 from Steinkopf is referred by Dr. Werner partly to capensis and partly to formosus—Dr. Roux recorded capensis from that locality. If we must accept all these records, it follows that the various forms capensis, formosus, and affinis—call them as we will species or varieties—have no geographical significance.

The most obvious difference between capensis and formosus is in the dorsal pattern, and it is interesting to note that parallel differences in other groups of animals obtain between the western Cape and Transvaal representatives of the same species. For instance, the Cape Peninsula form of *Bufo regularis* is a much handsomer creature than that of the high plateau, and the Cape form of *Amplorhinus multimaculatus* is appropriately named, whilst the high veld form of this species is uniformly dull green; *Dispholidus typus* is more handsomely marked in Cape Province than in the Transvaal, and similar striking differences are seen in *Sepedon haemachates* and in *Agama atra*.

The general distribution cited for formosus by Mr. Boulenger is Cape Colony, Bechuanaland, and Transvaal. I believe, however, that formosus in the strict sense does not occur in the Transvaal, nor have I seen any Bechuanaland records for this form; it belongs essentially to western Cape Province.

Other records for capensis sens. strict. are Potchefstroom (W. Moore); Athol, Ermelo District (Miss M. Forbes); and Dr. Werner gives Severelela in the Kalahari. The Athol specimen has eight thin white crossbands on the back, and reticulately arranged white lines on the hind part of the head; the nasorostrals are separated, but the specimen is not quite adult.

Pachydactylus rugosus Smth.—Rietfontein, Gordonia (H. Drew). Dr. Werner records it from Kubub and Kamaggas in German South-West Africa.

Pachydactylus maculatus Smith.—Mr. Boulenger's general distribution for this species is Cape Colony, Natal, Transvaal, and Southern Rhodesia. I know of no records from the Transvaal, but possibly it occurs in the low veld districts, as it is known from Zululand. The Bulawayo record is the first from Rhodesia, and the species was not included in Mr. Chubb's lists of the reptiles in the Bulawayo Museum.

Pachydactylus ocellatus Cuv.—Mr. Boulenger cites Cape Colony, Natal, Transvaal and Angola, but I have never seen any record from Natal and the Transvaal. It is essentially a western species. Werner cites Kubub, Luderitzbucht, and S. Hereroland.

Pachydactylus mariquensis Smith.—In view of the importance attached by Mr. Boulenger to the character which serves to distinguish his two divisions of the ocellatus section, I have re-examined the Bluecliff specimen of mariquensis (Port Elizabeth Museum). The specimen is undoubtedly referable to this species, having only three subdigital lamellae and perfectly typical head markings. The head is a little flattened and the snout is a trifle longer than the eye; the nasorostrals are in contact; the granules on the snout are about twice the size of those on the hinder part of the head; the rostral is broader than deep and it does not enter the nostril. Having regard to this variation in the head character, I am very doubtful about the validity of *P. serval* Wern. and *P. purcelli* Boul. which I suspect to be forms of ocellatus.

Pachydactylus serval Wern.—This form, according to the author of the species, is near to ocellatus, but differs as follows:—

Snout somewhat longer than the eye, nasorostrals usually separated, subdigital lamellae 4–5 .... *ocellatus.*
Snout $1\frac{3}{4}$ times as long as the eye, nasorostrals in contact, subdigital lamellae 6 .... *serval.*

The dorsal pattern is dark brownish-grey with unarranged dark spots. There is evidently very little fundamentally different between these two forms; at any rate they are not so widely separated in their head characters as represented in Mr. Boulenger's key, and the nasorostral character is quite unreliable, as I have found much variation in this respect both in bibroni and in capensis.

P. purcelli Boul.—The only character worthy of consideration is that furnished by the rostral scute, which is nearly twice as broad as deep and it borders the nostril; but it may be doubted if this is of specific importance (cp. Oedura). As regards the snout character it is intermediate between typical ocellatus and serval. The nasorostral character is not given. The colour markings are of the same general type as serval.

P. amoenus Wern.—This is placed by Dr. Werner near mariquensis. The characters are: snout 1½ times as long as the eye, nasorostrals separated, subdigital lamellae 5–6; five dark crossbands on the back, a dark spot on the side of the snout over both lips and another one on the lower lip just beneath the eye. The colour pattern is distinct enough, but in its structural characters it is difficult to see anything specifically distinct from ocellatus; the pattern of purcelli, "pale-brownish above with darker marblings or vermicular spots which may form more or less regular crossbands", connects together typical ocellatus and amoenus. Dr. Werner describes the rostral shield as twice as broad as long in amoenus, and Mr. Boulenger says of ocellatus, "rostral not or but slightly broader than deep; this is a character which presumably varies with the shape of the head".

Hemidactylus mabouia Mor. de Jon.—Bushman Mine, S. Rhodesia (Bro. J. H. Power).

Agama.—This genus is evidently in a very confused state. Dr. Werner regards both *distanti* Boul. and *brachyura* Boul. as local races of *hispida* Lin.; Dr. Gough considered that distanti is only a variety of hispida (see these Annals, Vol. I, p. 183); Mr. Boulenger maintains both as distinct species. Our material seems to show that *brachyura* Boul. is distinct from hispida proper, but approaches distanti, this latter form being, however, a geographical variety of hispida. Whatever view be taken it is desirable to make use of the names for distribution studies. In my opinion the following records require further investigation: hispida, distanti, and aculeata from Kroonstad (Boulenger); I think it likely that the two former records refer to only one species. The same authority records hispida from Durban and distanti from Kowie; if these species are really distinct it is remarkable that the species characteristic of the Cape Peninsula (i.e. hispida) should occur at Durban, whilst the high plateau form inhabits Kowie. Werner records hispida from Steinkopf, Mafeking, and the Kalahari, but qualifies this by saying that the Steinkopf example approaches brachyura and the Kalahari form distanti. Roux recorded brachyura from Steinkopf, and presumably he was dealing with the same species as Werner. As Dr. Roux has remarked, the records go to show that hispida sens. strict. belongs to the southern part of Cape Province (western half), whilst the form distanti belongs particularly to the Transvaal (and Free State), and brachyura belongs to northern Cape Province and Namaqualand. It is regrettable that Mr. Boulenger has completely united aculeata and armata. No doubt they are merely the extreme forms of the same species, but they appear to have a geographical significance, and the two forms have the same relationship to each other as hispida and distanti. Dr. Werner had already shown that the specific distinction between the two forms could not be maintained, but all his records from S. Hereroland, Kalahari, and German South-West Africa are referred to aculeata proper, although one of his Hereroland examples is said to be intermediate between the two species. The form armata on the other hand appears to be the eastern form occurring, for example, in Zululand.

Dr. Werner reduced *pulchella* Boc. as a synonym of aculeata, and planiceps from Windhoek he regards as specifically the same as colonorum, the former being the rock frequenting variety and the latter arboreal.

Agama brachyura Boul.—Additional records are Kimberley (Bro. J. H. Power), Victoria West (P. D. Morris), Cradock (Sister Joseph), Fish River Rand, Bedford District (Albany Museum, old collection), Tafelberg, Middelburg District, Cape Province (Ernest Gadd), Belmont (Kimberley Museum).

Dr. Werner says that the heterogeneous dorsal scaling is continued over the basal third of the tail in hispida, but not in brachyura.

Agama aculeata Merr.—Grahamstown (Albany Museum).

Zonurus giganteus Smith.—Zand River, Wakkerstroom District (Transvaal Museum), Basutoland (Albany Museum).

Zonurus polyzonus Smith.—My Irene record is incorrect; it should be Hanover, Cape Province (*vide* L. Taylor). It is not known from the Transvaal. Belmont (Kimberley Museum), Aliwal North (Albany Museum).

Zonurus cordylus Lin. and *Z. vittifer* Reich.—It is unfortunate that the records for these two forms have been lumped together in one by Mr. Boulenger. Dr. Jean Roux had previously united them specifically, but had assigned to vittifer the rank of a distinct variety. Whether we label it species or variety the form is easily distinguished from cordylus, and it is certain that the two forms have a geographical meaning.

My record Teafontein for vittifer was probably incorrect. I know of no certain record from Cape Province.

The distribution of cordylus is improperly known. Bocage recorded it from South Angola; Boulenger says the whole of South Africa, and cites Walfisch Bay, but Werner does not know it from German South-West Africa. The Walfisch Bay record comes from the same collector as the *Oedura africana* (*q.v.*). It may therefore eventually prove that cordylus sens. strict. is confined to Cape Province.

Zonurus jonesii Boul.—The specimens from Steynsburg and Uitenhage referred to by myself (Vol. II, p. 36) are probably immature individuals of cordylus. Kimberley is the most southern record known to me for jonesii. Pongola River (Transvaal Museum), M'moove (42 miles north of Serowe) (Dr. S. Schönland).

Zonurus tropidogaster Boul.—The description does not show what relationship this form has to vittifer and cordylus as distinct forms. As I have shown, the frontonasal scute of vittifer varies very considerably in degree of development, and Reichenow's original description stated "frontonasal very small". I cannot think that the absence of this scute is in itself of specific importance. The example is almost certainly juvenile. I think it highly probable that this is the same as vittifer.

Chamaesaura aenea Fitz.—Oakville Farm, Elliot District (C. S. McGregor). The only Cape record known to me.

Chamaesaura anguina Lin.—My Irene locality is incorrect; it should be Tokai, C.P. Grahamstown, Bathurst, and Swellendam (Albany Museum).

Chamaesauru macrolepis Cope.—Lower Tugela (A. Bentley), Durban Museum.

Platysaurus.—Mr. Boulenger unites capensis and guttatus. All the specimens I have seen agree with guttatus, and are different in general appearance from the form figured by Smith as capensis. Apparantly capensis has never been taken again from the locality (Great Namaqualand) given by Smith. My species wilhelmi is a distinct form, the adult male differing from guttatus in its broader head and heterogeneous dorsal lepidosis.

Nucras.—Dr. Werner has many records of tessellata from German South-West Africa, but apparently he has not seen delalandi from that part, though he adds that the species is recorded (Brit. Mus. Cat.) from Damaraland ; this record needs confirmation. The specimen from Shilowane recorded by me as doubtfully delalandi should be referred to tessellata. The Kimberley Museum has the same form of tessellata from Marandellas (Rhodesia). The largest Marandellas specimen is of large size, rather like delalandi, but the adpressed limbs are overlapping ; there are 41 scales across the body dorsally and there are 31 transverse rows of ventrals ; three granules between the supraoculars and supraciliaries ; dorsally it is almost uniformly light brown with the merest indication of dorsolateral and middorsal pale streaks, the sides are blackish with some pale scales, and anteriorly is an indication of pale vertical streaks. Along with this came two other specimens, typically tessellata in markings, but considerably smaller than the above. I judge from this that tessellata tends to lose its stripes with age.

Tropidosaura montana D.B.—Grahamstown (Miss G. E. Baines).

Ichnotropis capensis Smith.—Marandellas (Rhodesia), Kimberley Museum. Mr. Boulenger cites German South-West Africa, but Dr. Werner says it is not known from that region.

Ichnotropis squamulosa Pet.—Pongola River (Transvaal Museum).

Eremias lugubris Smith.—Francistown (Bro. J. H. Power). Dr. Werner cites "Aar, Südafrika", which appears to be a Cape record, the only one known to me.

Eremias inornata Roux.—According to Mr. Boulenger a synonym of *undata* Smith, but I do not so regard it. From the excellent figure and description given by Dr. Roux, it appears to be nearer namaquensis and if there be sufficient reason for uniting inornata with undata it will be necessary to include also namaquensis. Dr. Werner remarks that namaquensis and undata are very closely allied. However, the scaling of the lower eyelid will distinguish the three forms and as I have found this character very constant in other species (cp. lineocellata), it seems advisable to recognize the three forms as distinct species. This character is probably less variable than the number of rows of ventral scales, and is therefor more reliable for separating allied species, though Mr. Boulenger prefers the latter character in his key.

Eremias lineocellata D.B. and *pulchella* Gr y.—No doubt these are extremes of the same species and they are united by Mr. Boulenger. I think it is desirable to retain the names for as geographical varieties they are fairly distinct. They were maintained both by Roux and Werner whose records, moreover, agree together. It appears that pulchella belongs to German South-West Africa and western Cape Province, whereas lineocellata is the Transvaal, Free State, and Kalahari form. According to Werner, pulchella is a very variable species with many local races.

Eremias namaquensis D.B.—Victoria West (P. D. Morris), Middelburg, C.P. (P. O'Connor).

Eremias undata Smith.—The Middelburg record (Boulenger) requires investigation in view of the supposed relationship between this species and namaquensis, which latter species certainly occurs in that locality.

Scapteira knoxi M. Edw.—A very common species in German South-West Africa (Werner) and also known from the western districts of Cape Province. The Durban record (Boulenger) requires confirmation, this being the first record from the eastern portion of this subcontinent; indeed the whole genus appears to be confined to the western parts. The Comoro Island record of the Brit. Mus. Cat. is not now cited by Mr. Boulenger and is no doubt incorrect.

Scapteira depressa Merr.—In drawing attention to the identity of *Eremias suborbitalis* Pet. with this species Mr. Boulenger suggests a convenient character in the subocular scute for distinguishing between the allied genera Scapteira and Eremias. At the same time it would appear from the description of *S. reticulata* Boc. that this species has in that respect the same feature as the genus Eremias; and Bocage himself recognized that in the conformation of its anterior digits his reticulata departs from the typical Scapteira so that reticulata combines the characters of both genera, and as *S. depressa* has been referred by the various authors to both genera it is evident that the differences between Scapteira and Eremias are not sharply defined.

Scapteira reticulata Boc.—According to Dr. Werner, *S. serripes* Pet. is a synonym of the Angola species reticulata.

Scapteira cuneirostris Strauch.—Only known from German South-West Africa (Werner), and recorded from Walfisch Bay and Prince of Wales' Bay.

Gerhosaurus major A. Dum.—The distribution of this species is not so disconnected as was hitherto supposed (typical form in German East Africa, and grandis in Zululand), for it is recorded (Manchester Memoirs, Vol. 51) from the Feira district near the Zambezi (Boulenger).

Gerrhosaurus nigrolineatus Hallow.—This was reduced by Tornier as a variety of flavigularis, and his opinion was endorsed by Roux, Werner, and myself, but Mr. Boulenger still retains the species. I have re-examined our collections on this point and find that as regards the praefrontal character—which is, in my opinion the only character worthy of consideration—all our Cape specimens agree with flavigularis in the strict sense, but a single specimen from Serowe (S. Blackbeard) agrees with nigrolineatus; however, another specimen from the same locality and donor agrees entirely with flavigularis and as the two specimens are otherwise precisely identical, there can be no doubt but that they belong to a single species, flavigularis. *G. nigrolineatus* may be a distinct form in tropical Africa, but in South Africa the individuals that have been thus named are almost certainly specifically identical with flavigularis. Werner records the variety nigrolineatus from Nitdraai, east of Windhuk, but this appears to be his only record for flavigularis from German South-West Africa.

Gerrhosaurus auritus Boett.—I have already given reasons for suspecting the validity of this species, and it now appears that it is only known to Dr. Werner through the original description.

Mabuia.—The records for this genus require thorough revision. Dr. Werner has evidently confused together the two species trivittata and varia, though they are not closely allied; his figure of varia (Pl. 8, fig. 12) really represents a half grown specimen of trivittata. In his description of calaharica, reduced by Mr. Boulenger as a form of trivittata, Dr. Werner says "subocular scute not reduced and subdigital lamellae smooth", and yet he placed it as a near ally of varia.

M. peringueyi Boul.—In view of the variation exhibited by this form and by homalocephala as mentioned in my previous paper, it will be necessary to regard peringueyi as a local form of homalocephala.

M. occidentalis Pet.—According to Dr. Werner this species is distinguished from trivittata by the following characters, in addition to that of the ear lobules: occidentalis has 23 subdigital lamellae and the anterior angle of the frontonasal is a right angle: trivittata has 19 subdigital lamellae and the anterior angle of the frontonasal is obtuse.

M. trivittata Cuv.—Mafeking (Kimberley Museum).

M. varia Pet.—This species closely resembles striata as stated in my previous paper, and it may also be very similar in dorsal pattern to sulcata; in our Middelburg (Cape) specimens of varia there is the same longitudinal striping as in sulcata, and the white lateral streak of a typical varia is not well marked. It can be distinguished from sulcata by the subocular character and by its longer ear lobules.

Middelburg, C.P. (P. O'Connor), Victoria West (P. D. Morris).

M. sulcata Pet.—The characters cited in Mr. Boulenger's key are insufficient for separating sulcata and striata. The presence of tricarinate dorsal scales in sulcata has been noted both by Dr. Werner and myself. The Durban record (Boulenger) requires confirmation.

M. hildebrandti Pet.—This was first recorded from South Africa by Dr. Werner and more recently by Mr. Boulenger. The identification appears to be somewhat doubtful. Dr. Werner's figure does not agree with the description of the species as given in the Brit. Mus. Cat.; however, he mentions that the identification is uncertain, as in his specimens the first upper labial is not in contact with the loreal—whereas they are broadly in contact in the type specimens—and, moreover, the hind-limb is shorter and the colour different. Whatever may be the identity of Werner's species, it cannot be quite the same as the form called hildebrandti by Boulenger, for the latter author in his key distinguishes between varia and hildebrandti simply by the length of the hind-limb in relation to the body, and Werner's figure agrees precisely with varia in this respect; this figure unfortunately does not clearly show the subocular character, so that it is impossible to judge further of its affinity to varia. The disconnected distribution of hildebrandti as cited by Mr. Boulenger is somewhat remarkable, "Somaliland, German South-West Africa, Little Namaqualand", but is not specially anomalous if hildebrandti is merely a longlegged form of varia. The original description of Peters is insufficient for critical distinctions but he stated that in habit and form of the upper head shields the species closely resembles quinquetaeniata, and from his figure it appears that the subocular character is very like that of varia. According to the descriptions the following are the distinguishing characters of this species: snout much depressed with deeply concave loreal margin, hind-limbs longer than in varia, being 34 or 36 mm. (170 mm. total length), whereas in varia the hind limbs are 27 mm. (total length of 165 mm.). The mutual relationships of the three forms, hildebrandti from Somaliland, hildebrandti from German South West Africa, and typical varia, require investigation.

Scelotes bipes L.—Port Nolloth (Werner). Mr. Boulenger cites German South West Africa, but Dr. Werner does not know it from that region.

Scelotes guentheri Boul. and *gronovii* Daud.—The former name, according to previous identification by the author of the species, applies to the Natal and Zululand form, and the type was described and figured as having a postnasal scute; besides the specimens previously mentioned by myself, I have seen still another example, from Makowe, Zululand (Durban Museum), which was without the postnasal scute. But this, according to Mr. Boulenger's key, is the only point of distinction from gronovii. It seems likely that the three forms, *gronovii* Daud., *inornatus* Smith, and *guentheri* Boul., are only to be distinguished by the character of the hind-limb, which, being at the most a mere rudiment, may be expected to show variation. It is noteworthy that inornatus and guentheri were both recorded from Port Natal (Brit. Mus. Cat.).

Acontias.—It is by no means easy to satisfactorily distinguish between the three species. *A. lineatus* Pet. has been recorded both by Mr. Boulenger and myself from eastern Cape Province (Port Elizabeth, etc.), but I now believe that such examples are more correctly referred to meleagris, and that lineatus in the strict sense is confined to the Western Province. In any case they differ appreciably from the typical form as figured by Peters and resemble the immature forms of meleagris excepting in the supraocular character; but I find that this character is not constant in specimens taken together in the same locality, so that it cannot be used for separating species. Mr. Boulenger records both meleagris and plumbeus from Delagoa Bay, but it may be doubted if such examples from this one locality really represent two distinct species. The species characteristic of Zululand and eastern Transvaal is plumbeus, which when adult is easily distinguished from meleagris, but half-grown specimens might be referred to either species.

Batrachia.

Mr. Boulenger's key to the families is incorrect as regards the dentition of the upper jaw (cp. Cacosternum).

Pyxicephalus.—This old genus, which for good reasons was abolished by Mr. Boulenger in the Brit. Mus. Cat., has been lately restored by Dr. Nieden, and the restoration is accepted by Dr. Werner and by Mr. Boulenger. But, as shown by the latter authority, it agrees very closely with Rana, and the only possible justification for a generic separation is the character of the outer metatarsals. But the fact is, the degree of separation of the outer metatarsals varies much in the genus Rana (sens. strict.), and careful examination shows that the following species form a natural series leading from typical Rana to typical Pyxicephalus: *fuscigula* D.B., *angolensis* Boc., *grayi* Smith, *natalensis* Smith and *delalandi* Tschud. There is indeed a very close general resemblance between *R. grayi* and *R.* (*P.*) *natalensis*, and the colour pattern on the side of the head is practically identical in these two species. It is admitted that *delalandi* Tschudi and *delalandi* D.B. are strikingly different, and generic separation would perhaps be permissible were it not for the fact of the existence of such forms as grayi and natalensis. But even when we consider the extreme forms there is evidently more in common than exists between Rana and any other genus of the family; so far as is known the skeletal characters are the same—certainly this is the case with the shoulder girdle—and the common feature of longitudinal glandular lines on the skin is not known in any other genus, at any rate in South Africa. Considering the wide range of variation which is exhibited even in the same species of Rana (*vide* Boulenger in Brit. Mus. Cat.) I fail to see the wisdom of separating these two groups of frogs as distinct genera on such slender grounds.

Rana angolensis Boc. and *fuscigula* D.B.—Mr. Boulenger's distribution for fuscigula is "South Africa, British Central Africa, West Africa"; Dr. Werner says "South Africa und angeblich aus Sierra Leone", which is better in accordance with the known facts of distribution in South Africa, for here the species is confined to the western part of Cape Province and German South-West Africa, in which latter region it is rare apparently. The Angola species is angolensis, which spreads over the high plateau and eastern portions of South Africa; if fuscigula of western Cape Province reappears in British Central Africa and then again in West Africa north of Angola, its distribution must be very disconnected. The two species are not always easily distinguishable and quite possibly they are extreme forms of the same thing; but however this may be, there is abundant reason for believing that the two forms occupy definite and distinct areas in this sub-continent. It seems as if Mr. Boulenger has confused together the two forms, for he records both species from the same collectors at Port Elizabeth, Calvinia, and Smithfield. As regards the Port Elizabeth species, the material lent me by Mr. Fitzsimons is undoubtedly angolensis; the Calvinia record for angolensis certainly requires confirmation. The proportions of the hind-limb relative to the body is no doubt, as emphasized in Mr. Boulenger's key, a good distinguishing character, but it may be doubted if this character alone is really reliable; at any rate the shape of the snout should be taken into consideration.

Bro. J. H. Power has taken angolensis at Modder River.

R. queketti Boul. is now reduced by its author as a synonym of *fuscigula* D.B., but, assuming the correctness of the locality record (Pietermaritzburg), I doubt if it be the same thing as fuscigula of western Cape Province; the original description gave the toes as two-thirds webbed but fuscigula has entirely webbed feet. If my view be correct, that this is a form of angolensis, here is an instance of the uncertainty of the character of relative length of hind-limb and body. Dr. Werner recorded queketti from Lobatsi, but added that it differed only from fuscigula in the shorter web and unspotted throat; but it is evident that he was dealing with a juvenile specimen 34 mm. long, and no importance can be attached thereto.

R. mascareniensis D.B.—The Rev. R. Godfrey has taken this species at Pirie, the most southern record known; Victoria Falls (Honourable P. Methuen).

R. grayi Smith.—The Woodbush specimen (Honourable P. Methuen) came from an altitude of about 5500 feet. Probably humidity is an important factor in determining the distribution of this species. Mr. Methuen took the allied species *fasciata* Tschudi in the same neighbourhood at 5800 feet.

R. (*Pyxicephalus*) *ruddi* Boul.—This will probably prove to be a synonym of *R. ornata* Pet. A careful comparison between the excellent figures published with the original descriptions of these two forms shows a striking resemblance, even to details of colour pattern. Mr. Boulenger stated, however that his ruddi is "very closely related to *P. ornata* Pet ".... but " differs in the shorter web between the toes "; a difference which is hardly appreciated in the figures and represents only a slight range of variation.

R. (*Pyxicephalus*) *adspersus* Bib.—Dr. Werner's figure of the tadpole is a very poor one, and quite incorrect so far as the tail is concerned, the swimming web being much better developed than represented in that figure.

Phrynobatrachus.—It is hard to believe that the three forms *natalensis* Smith, *ranoides* Boul., and *capensis* Boul. really represent so many distinct species. The two latter are almost certainly very young forms—natalensis exceeds 30 mm., whereas the type of ranoides was 22 mm. and capensis 15 mm. In my Grahamstown series of natalensis there is a juvenile specimen of 17 mm. which agrees well with the description of ranoides, and I do not doubt but that ranoides at any rate is invalid. The distinguishing characters of the key (Boulenger) are not trustworthy, as the tympanum varies according to the method of preservation, and the length of the hind-limb also varies, though not to a great extent in adults. As regards capensis, there are two characters cited in the description which do not occur in our series, viz., absence of median papilla on the tongue and absence of the tarsal tubercle.

Rappia.—This whole genus requires critical revision. Judging from the very extensive and overlapping distribution accorded to several closely allied forms, it may be doubted if they are all distinct species. For instance, *undulata* Boul. was first described from the Congo, afterwards recorded by the author of the species from Pietermaritzburg and now from Cape Division and from Port Elizabeth; *cinctiventris* Cope has a similar distribution, Senegal, Congo, Angola, Zambezi, Natal, and Cape Colony; the original description of undulata stated that it is to be distinguished from cinctiventris by the very small head, and now the key (Boulenger) gives " fingers one-third webbed—undulata ", " fingers not one-third webbed—cinctiventris ". The Cape Peninsula record (Boulenger) for marmorata is the first record of this species from the Western Province. *R. argus* Pet. was recorded by Peters from Boror, Upper Zambezi and Zanzibar Coast, and Mr. Boulenger's general distribution includes Zululand, but I have seen no published records from that district, though quite likely it will prove to occur there.

R. sugillatus Cope, which in the British Mus. Cat. is placed as a possible synonym of *microps* Günth., appears to be the same as *nasuta* Günth. judging from Mr. Boulenger's key; Cope's original description is inaccessible to me.

Cassina senegalensis D.B.—There are several Cape Division records which, being unique, require confirmation—they come from the same collector (De Souza)—*Cassina senegalensis*, *Megalixalus spinifrons*, and *Rappia marmorata*.

Phrynomantis annectens Wern.—The published data regarding this species leaves much to be desired. The type and only known specimen is 16 mm. long, whereas *P. bifasciata* reaches three or four times that length. The author of the species remarks that it closely resembles a Cacosternum in that the head and body are considerably depressed. The actual colour characters given are: above light-grey, having in the frontoparietal region a black spot which is prolonged anteriorly towards the eyes on either side and behind is in contact with a dark angular crossband in the shoulder region, the angle directed forwards; a large dark spot on each side of the coccyx, the two spots touching behind; hind legs dark with light crossbands; lower surfaces dirty white, belly with a darker W-shaped design.

Cacosternum.—Dr. Werner has also noticed that in this genus the sternum has a bony style, and it appears that the error of the original description in this respect led him to describe namaquense as a distinct species. Apparently it has not been taken in German South-West Africa, but there are several records from Little Namaqualand.

Hemisus guttatum.—Umgeni (W. W. Cato), Durban Museum.

Breviceps.—Mr. Boulenger has added a good discriminating character in the length of the fourth finger.

B. pentheri Wern. has to be abandoned, as Dr. Werner himself reduces it; but I doubt if he is correct in placing it as a synonym or verrucosus. As regards *adspersus* Pet., this species was merely indicated rather than described by Peters and I suspect that it is not the same form as is called adspersus by Mr. Boulenger. Peters' distribution for the species was Transvaal and Damaraland, and all the Transvaal material I have seen agrees with mossambicus rather than gibbosus; at the same time there is no reason to suppose that Peters' specimens differed so much from gibbosus in respect to the eye character as is represented in Mr. Boulenger's key, as Peters would certainly have noticed so obvious a distinction. One is inclined to suspect that the form so named by Mr. Boulenger is really the same as his macrops, especially as he records adspersus from Port Nolloth, a locality from which I have received typical specimens of macrops. It seems very probable that *pentheri* Wern. and *adspersus* Pet. are the same, and I cannot separate them from *mossambicus* Pet.

As for verrucosus, it does not seem advisable to completely unite the species with gibbosus, as the typical gibbosus of the Cape Peninsula and verrucosus of Knysna are so very distinct; no doubt, however, various verrucose forms of breviceps have been wrongly recorded under this name. In the records of gibbosus and mossambicus (Boulenger) there is, I think, evidence of a probable confusion (cp. the Durban and Barberton records).

The Kimberley species which I provisionally referred to pentheri is presumably the same as *adspersus* Pet. and the same form occurs at

Mochudi (Kimberley Museum); it reaches a length of 50 mm. and differs only from typical mossambicus in that the dorsal surface is distinctly roughened, not smooth.

The unsatisfactory state of the synonymy of this genus is without doubt due mainly to the fact that no worker has ever had a good series of adult specimens at his disposal.

Bufo.—It is evident that Dr. Werner's conception of angusticeps is not the same as is entertained by Mr. Boulenger for one of Werner's specimens thus labelled is described as having the first finger longer than the second, whereas according to Boulenger, this is the distinguishing character of regularis. The following records require investigation: regularis and granti both from Smithfield, angusticeps from Natal, and vertebralis from Kentani (Boulenger). All previously published records go to show that angusticeps belongs specially to western Cape Province; vertebralis is more widely distributed than was supposed for I have had specimens from Victoria West (P. D. Morris), and Bro. J. H. Power records it from Madibi.

ON THE RE-DISCOVERY OF THE BAT
Kerivoula brunnea, Dobs.

By E. C. Chubb, Curator of the Durban Museum.

Amongst a collection of bats belonging to the Transvaal Museum which, through the kindness of the Director, Dr. Gunning, I have been allowed to examine, is one which proves to belong to *Kerivoula brunnea.* This species was described by Dr. Dobson in the "Catalogue of Chiroptera" in 1878 from a single specimen, whose habitat was not definitely known, and until now no further example has been found.

The present specimen is the skin and skull of an adult male, collected by Messrs. Vaughan-Kirby and Austin Roberts on the 27th October, 1908, at Matieve, Boror, Portuguese East Africa. It has been compared with the type in the British Museum by Mr. Oldfield Thomas and Dr. Knud Andersen, who agree in assigning it to this species.

As the original description was based upon a not fully adult specimen, which, moreover, had somewhat suffered through long soaking in spirits, it seems worth while recording the measurements of the present example, and also the manner in which it differs from Dobson's original description.

Measurements.

Taken in flesh by the collectors :—

	mm.
Head and body	46
Tail	44
Hind foot	7
Ear	12

Taken upon dried skin and cleaned skull :—

Skin :

Wings—Forearm	35
Third finger—Metacarpal	35
First joint	19
Second joint	27
Fourth finger—Metacarpal	34
First joint	13
Second joint	12·5
Fifth finger—Metacarpal	34·5
First joint	11
Second joint	10
Tibia	15

Skull :	mm.
Extreme length	15
Basal length	12·5
Extreme width of brain case	7
Zygomatic width	9·5
Maxilla, width across outer margin of M^3	6
Orbital constriction	3
Med. post. point of palate to front of praemaxilla	8
Med. post. point of palate to foramen magnum	4
Mandible, condyle to front of incisors	10·5
Teeth :	
Front of upper canine to back of M^3	6
Front of lower canine to back of M_3	6

General colour above, russet brown; the basal half of hairs on back very dark-brown, followed by light golden-buff, grading into a rich brown, and terminating in white. Below almost white, the bases of the hairs greyish. The hairs on the upper surface of legs and the interfemoral membrane rich golden-brown. Upper surface of forearm, carpals, and thumb covered with short golden hairs, which extend along the margin of the wing on the second metacarpal. Inner upper incisors somewhat longer than the outer ones.

(22nd December, 1910.)

ON THE LIGHT ORGAN OF FIRE-FLIES.

By Mrs. A. B. Howard.

(*Read before the Transvaal Biological Society.*)

Some of the most interesting problems connected with the light of the fire-fly belong to physics and chemistry rather than to biology. These are the problems connected with the nature and source of the light. The physical properties have been studied by Dubois, Langley, Very, Young, Watosé, and others, with essentially the same results. The spectrum of the light given by the Lampyridae is perfectly continuous, without any trace of lines, either dark or bright. It lies almost wholly within that portion of the spectrum which is visible to the human eye, although the presence of actinic rays has been demonstrated by photography.

The most remarkable fact about the light is that it is practically, if not absolutely, a " light without heat ". In 1902 the late Professor Langley, of Washington, told me that after thorough experiment with the most delicate thermal apparatus known to science he could authorize the statement that not more than one-thousandth, if any at all, of the energy expended in the flash of the fire-fly is lost in heat. When one considers that with our ordinary artificial lights less than one per cent. of the energy is sometimes available for light, and even with the electric arc only ten per cent., the wonderful economy of this " cheapest form of light " becomes very apparent.

Were it not for the small size of the light organs, and the minute quantity of photogenic substance obtainable for analysis, doubtless more would long since have been done by the chemist toward determining its nature. If this substance could be analysed, produced artifically, and used for lighting purposes conveniently, its economic importance could scarcely be estimated.

While organic light has always been a source of interest to scientists, little has been done beyond the investigation of its physical properties. The generally accepted theory as to the origin of the light is that it results from the oxidation of some substance secreted by the cells of the light organ. The purpose of my investigation, begun at Cornell University in June, 1901, has been to study the structure of the light organs with the hope that the knowledge gained would be of value in determining the nature of the photogenic process. In other words, I wished to see whether the tracheal structures were such as to presuppose some special demand for oxygen in that portion of the body.

In spite of the number of species and wide distribuiton of fire-flies in America, I found that practically no histological work had ever been attempted. The very limited literature on the entomological side of the question was in German and French, and was confined to a very few writers. Comparisons of structure were, therefore, possible only with two European species, *Lampyris splendidula*, studied by Max Schultze in 1864, by Wielowiejski in 1882, and by Bongardt in 1903; and *Luciola italica*, studied by Emery in 1884.

The species chosen for my work was *Photinus marginellus*, a small, light brown fire-fly very common in the vicinity of Cornell University during June and July. Of several hundred insects collected during three summers, only a small number were females. The female, although having fitly developed elytra and wings, apparently does not fly, as I have found all those collected either on the ground or on some low plant near the ground.

The female has a single somewhat spherical light organ in the centre of the fifth abdominal segment, and the light is much inferior to that of the male.

The larva of *Photinus marginellus* has never been recorded, and I was never able to find it. Neither did I ever succeed in getting eggs to develop, although I made several attempts.

All my work was confined to light organs of the adult male. These are in the form of two plates, completely filling the ventral part of the fifth and sixth abdominal segments. They lie directly upon the very thin hypodermis. The underlying cuticle is transparent, allowing free emission of the light. The main tracheae of the photogenic segments send numerous branches into the light organs, perforating the whole dorsal surface.

Where a section of the light organs of *Photinus marginellus* is studied with the microscope, it is found to be composed of two clearly defined layers. The ventral layer is composed of fairly regular, polygonal cells filled with a dense content of coarse granules. With transmitted light these granules are a dull brown. With reflected light, in both fresh material and prepared sections, they show a peculiar chalky whiteness which has given to the dorsal layer the name of "chalky layer".

In 1857 Kölliker analysed the granules from the dorsal layer of *Lampyris* and found them to be crystals of urate salts. This analysis has been verified by recent workers, among them Bongardt, in 1903. Granules, identical in appearance, are to be found in the fat body in the photogenic segments of *Photinus*.

The ventral layer differs widely in structure from the dorsal. The tracheae continue to branch even more profusely in an arborescent manner characteristic of the photogenic tissue. There is a striking feature of the tracheal structures in the ventral layer which is wholly different from that in the dorsal layer. Each of the larger branches coming through the dorsal layer is approximately vertical in its course. Each of these tracheal trunks with its branches is surrounded by a cylindrical mass of tissue which is transparent in fresh material. These cylinders are distributed through the tissue with considerable regularity. Between these are cells very irregular in size and shape. These cells are called the "parenchyma cells".

Near the periphery of the cylinders the small tracheal branches divide, sending out generally two, rarely three or four, tracheoles. These tracheoles are fine tracheal branches characterized by having no spiral thickening of the intima. When fresh material, treated for half an hour with .5 per cent. osmic acid, then for a few minutes with weak caustic potash, is placed under the microscope ventral side up, the tracheae can readily be traced. The outlines of the cylinders persist, the branching of the tracheae is seen, and the origin and course of the tracheoles. In all such preparations studied the tracheoles from different cylinders anastomosed, forming a close tracheolar network throughout the area of parenchyma. Although the tracheoles are generally cut in sections parallel to the axis of the cylinder, yet even here occasional demonstrations of anastomosing are to be found. I have found no indication of the penetration of the parenchyma cells by the tracheoles; they appear always to be intercellular in their course.

Wielowiejski found anastomosing of the tracheoles to be the rule in *Lampyris splendidula,* although he admits of some exceptions. Wistinghausen and Holmgren, in their studies of tracheal-ending in the silk glands of caterpillars, found the same anastomosing of the tracheal capillaries. Emery, however, states that in *Luciola* the tracheoles always end free.

Max Schultze, in 1864, in studying osmic acid preparations of *Lampyris splendidula,* found at the periphery of the cylinder certain darkened cell-like bodies into which the smaller tracheal twigs entered. Failing to find any continuation of the tracheae beyond these bodies, he called them the "tracheal end-cells".

In osmic acid preparations of *Photinus* there is always a blackening of the smaller tracheae at the point of division to form the tracheoles; the tracheoles themselves are blackened throughout their extent. Surrounding the point of origin of the tracheoles the tissue is also more or less blackened. In the typical preparations with this fixation there are darkened rounded bodies which might seem at first to be cells. In other preparations there are irregular masses instead of cell-like bodies. The dark cell-like bodies are found in *Luciola,* where the structure closely resembles that of *Photinus.* As these bodies are only found in osmic acid preparations, Emery regarded them as an artifact and not as true cells. In *Photinus* they occur only in osmic acid material, vary considerably in different material, and are always accompanied by an apparent shrinking and distortion of the tissue of the entire cylinder. It would seem probable, therefore, that they are an artifact. In any case they are incorrectly termed "end-cells", as the tracheoles extend to a considerable length beyond them.

Wielowiejski and Bongardt have found the "end-cells" described by Max Schultze in *Lampyris splendidula,* but have also found that they do not contain the ultimate tracheal endings, the tracheoles passing out of them. In *Lampyris,* it is asserted, the "end-cells" are formed by the epithelium of the tracheoles. In the "tracheal capillary end network" found by Wistinghausen and Holmgren in Lepidopterous larvae, it is stated that the epithelium is spread out in a web-like manner to form the "end-cells". Wielowiejski, Bongardt, Holmgren, and Wistinghausen thus all agree that the tracheal epithelium is abnormally developed and spread out to form the "end-cells", or "transition cells" as Holmgren more correctly terms them. Emery considers the cylinders of *Luciola* as homologous to the "end-cells" of *Lampyris,* and as modified tracheal epithelium.

The cylinders in *Photinus* are clearly shown to be of cellular structure. They contain numerous small nuclei near the tracheal axis, but clearly separate from the tracheal epithelium, which may be traced even to the smaller branches. Throughout the photogenic tissue of *Photinus* the tracheal epithelium is very thin, with large flattened nuclei, and there is no indication of abnormal development. Another striking difference from the conditions in *Lampyris splendidula* is that in the latter Bongardt found the "end-cells" and tracheoles more abundant in the dorsal layer than in the ventral. In *Photinus* these structures are clearly confined to the ventral layer.

As to the derivation of the photogenic tissue, the form and content of the cells has led to a general idea that it is modified fat body. Raphael Dubois, from a study of *Lampyris noctiluca* and *Pyrophoms noctilucus*, claims that it arises by proliferation of the cells of the hypodermis. His statements are based on a study of the developing organs from the ovum to the adult insect. He further finds that in the development of the organs by means of the physiological changes incident to photogeny, the dorsal layer becomes filled with opaque granules and ceases to be photogenic. The marked difference in structure between the two layers in *Photinus* make it difficult to believe that in the adult insect, at least, there is any growth of one at the expense of the other. There is no apparent difference in the relative thickness of the two layers at the beginning and at the end of the flying season.

Summing up the structure briefly, we find that there are two distinct layers. The ventral layer is made up of two elements, the cylinders with their tracheae and the parenchyma. Throughout the parenchyma is a network of fine air capillaries.

When a fresh light organ is studied under a microscope, the dorsal layer is found to be non-photogenic, opaque, and chalky white. The ventral layer is seen to be the truly photogenic layer. When the ventral surface is studied under a microscope in the dark-room, the light is found to be uniformly distributed through the parenchyma, the area of the tracheolar network. The cylinders stand out against this luminous background as non-photogenic rings. It is thus evident that the process of photogeny takes place in that portion of the ventral layer which lies between the cylinders, and it is exactly this portion of the tissue which has a provision of air not known elsewhere in insect histology.

The light of the fire-fly is entirely independent of the life of the photogenic cells. When the light organs are crushed the light becomes more brilliant as the tissue comes more directly in contact with the air and continues for several hours if the tissue is kept moist. Crushed light organs become brilliantly photogenic under the influence of oxygen, and the light continues for several hours. If slides with crushed organs are placed in a jar of CO_2 the light is quickly extinguished, but when the slides are transferred to a jar of oxygen the light reappears instantaneously.

With the exception of Raphael Dubois, all modern workers on organic light agree that it is a process of oxidation. In the fire-fly it is supposed to be the oxidation of some substance secreted by the parenchyma cells of the ventral layer. The exact nature of this substance has not yet been determined. Watosé states that it is of a fatty nature. Radziszewski, through his study of the artificial luminosity of lophin, discovered a series of carbon compounds similar to those found in living organisms and capable of becoming luminous under conditions compatible with life. These conditions he found to be slow chemical action in the presence of alkalies. He found that the caustic alkalies could be replaced by cholin, neurin, and other substances found in living creatures. The light from these carbon compounds was shown by the spectroscope to be identical in nature with that produced by photogenic organisms. Watosé had previously stated that the light of the fire-fly was the result of oxidation in alkaline media of a granular secretion of the photogenic cells.

The only opposing voice is that of Dr. Raphael Dubois. He wholly discards the oxidation theory and substitutes for it that of a reaction between two substances which he claims to have isolated and to which he has given the names luciferose and luciferine. He admits that oxygen and moisture are essential to the reaction. He states, however, that in his experiments, the effect of oxygen was to extinguish the light without first giving any increase in brilliancy.

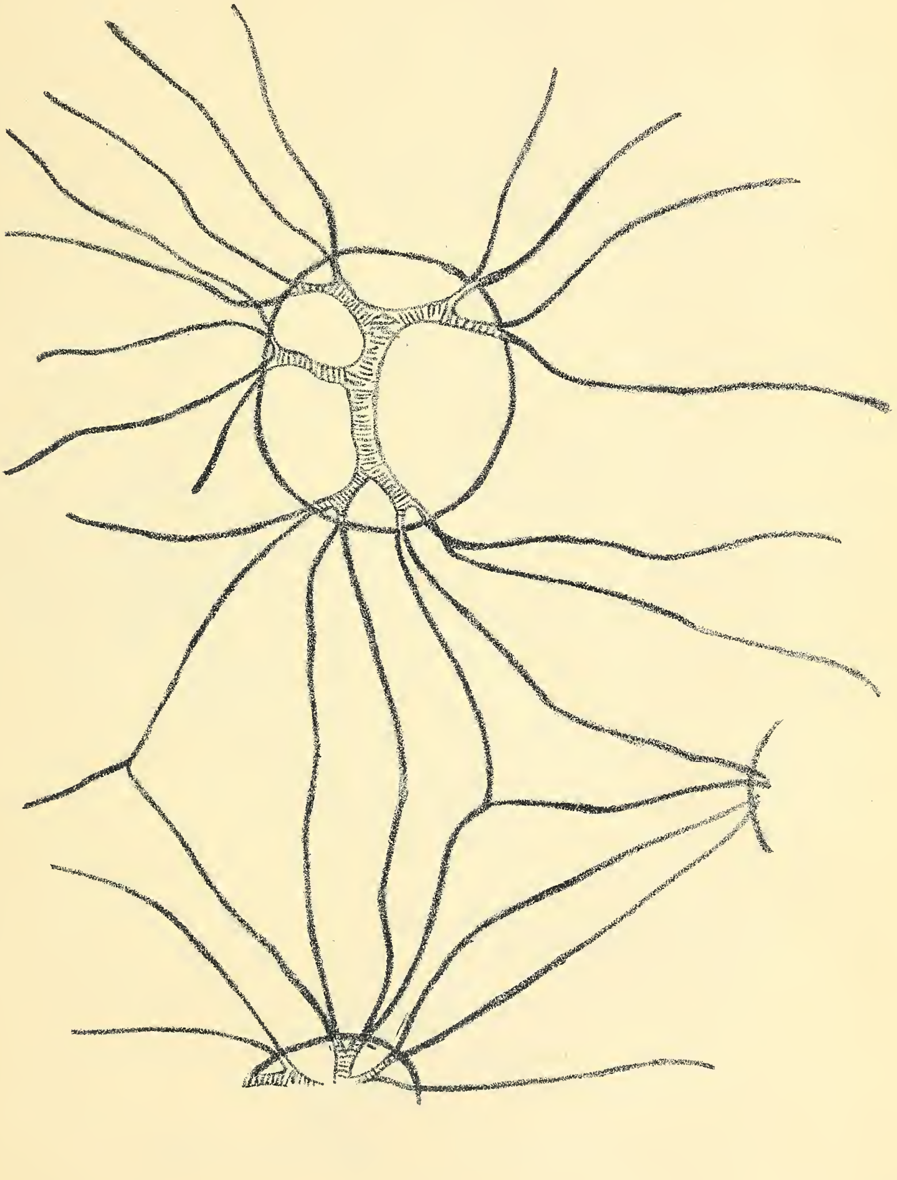
As a large part of Dubois' experiments were upon a marine mollusc, it seemed that a comparative study of the light of *Photinus* with that of some marine organism would be helpful. Consequently I followed the work previously done with the fire-fly by a summer at the Marine Biological Laboratory at Wood's Hall, Massachusetts. The form chosen was *Mnemiopsis leidyi.* The work done was very far from complete, but even so it seems significant.

Mnemiopsis leidyi, one of the Ctenophores, is quite common near Wood's Hall during the summer months. It is a beautiful jelly-fish, almost as transparent as the sea water. The specimens upon which I worked varied from one to six inches in length. The light is produced by cells lying between the longitudinal rows of swimming plates. It is given only when the Ctenophore is disturbed in some way.

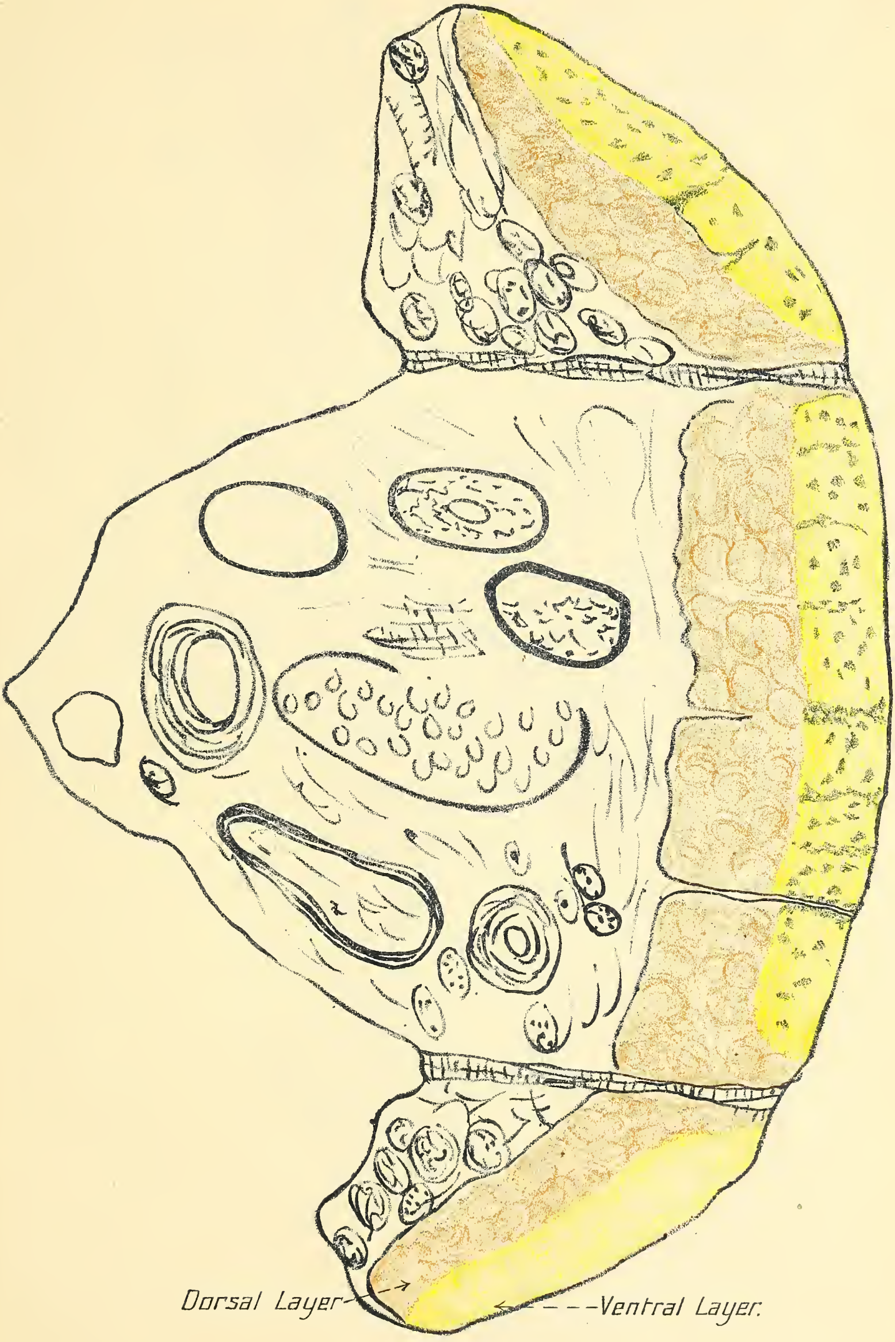
When the living animal is placed in various solutions and gases the effect seems to depend almost entirely upon the extent to which it is irritated. The same agents give entirely different results when the photogenic tissue is brought directly under their influence. When live Ctenophores are placed in acid and alkaline solutions they flash more frequently in the former, but very soon die in both. When the photogenic tissue itself is placed in acid solutions, the light is wholly extinguished and does not reappear under the influence of oxygen. In alkaline solutions the light persists for a considerable time and becomes more brilliant when oxygen is passed over the tissue. Material left for half an hour in an acid became luminescent when an excess of alkali was added, and gave a brilliant light under the influence of oxygen.

There remains a wide field for investigation. There are very great differences in structure between fire-flies of closely related genera, and little has yet been done with the multitude of marine light-givers. I believe, however, that in all forms, however widely separated, we shall find the process of photogeny to be essentially the same and to be one of oxidation.

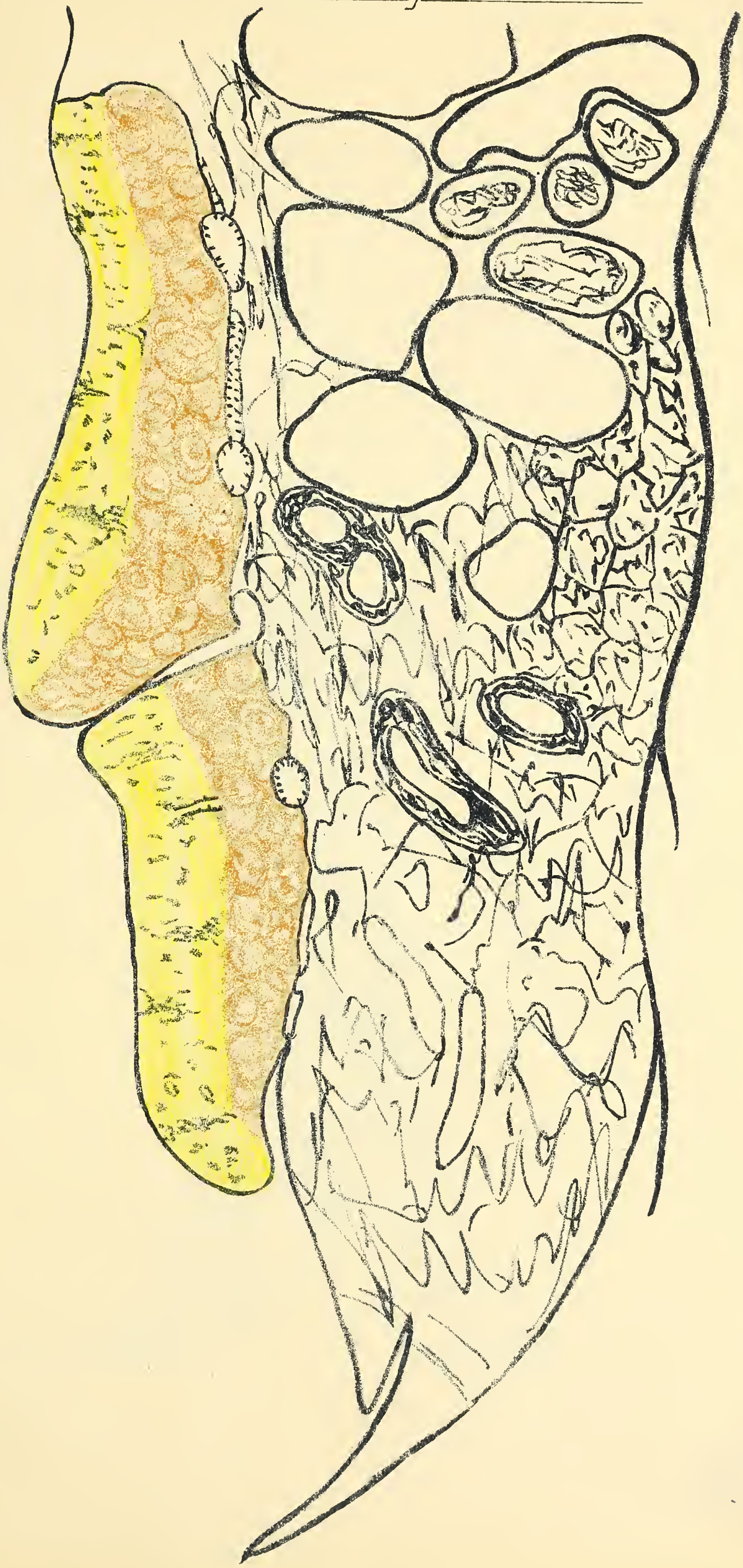
Teazed preparation to show anastomosing of Tracheoles.



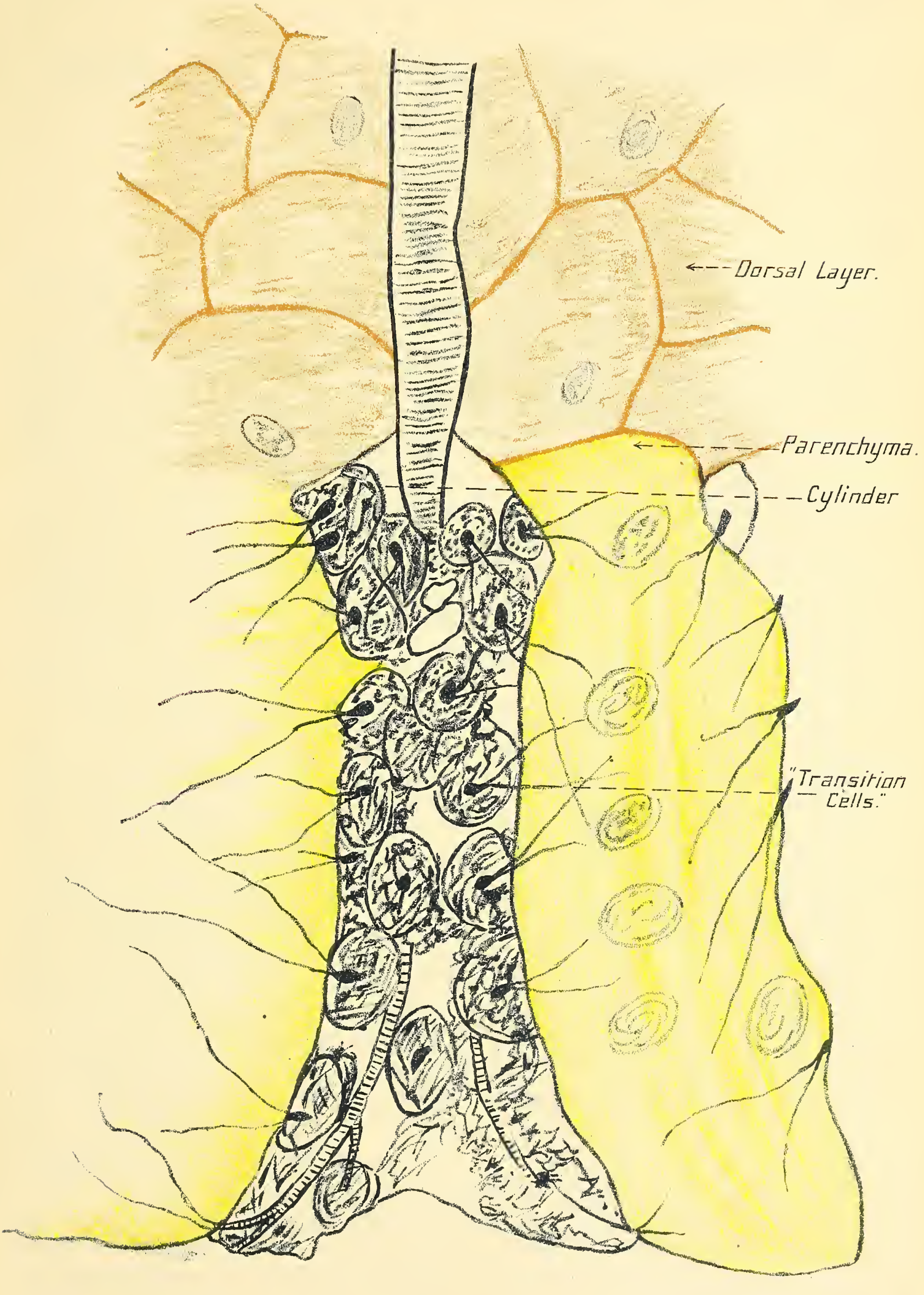
Transverse Section through Abdomen.



Longitudinal section of Abdomen From 5th Segment to Caudal End.



Typical osmic Acid preparation.



DESCRIPTIONS OF SOUTH AFRICAN MICRO-LEPIDOPTERA.

By E. Meyrick, B.A., F.R.S.

III.

Eucosmidae.

Eucosma nasuta, n. sp.

♂. 14 mm. Head, palpi, and thorax light brownish-ochreous. Abdomen grey, anal tuft whitish. Forewings elongate, narrow, costa gently arched, without fold, apex forming a long rounded prominence, termen abruptly excavated beneath this; brownish-ochreous sprinkled with brown and fuscous, suffused with brown on costal half except towards base; dorsum and anterior half of costa dotted with blackish; a slight blackish transverse mark beneath fold before middle; some dark fuscous scales on angles of cell; cilia brownish-ochreous, round apex with a blackish sub-basal shade, above apex with a blackish hook. Hindwings with 3 and 4 stalked; grey, veins darker; cilia pale greyish, suffused with pale ochreous round apex and upper part of termen.

Ngqeleni, West Pondoland (Swinny); in August, one specimen. Characterized by the peculiar form of wing. Type in Transvaal Museum.

Bactra quadratica, n. sp.

♀. 14 mm. Head and thorax whitish-ochreous, face more whitish. Palpi 2½, pale ochreous-yellowish, apex white. Abdomen whitish. Forewings elongate, rather narrow, costa gently arched, slightly bent in middle, apex round-pointed, termen straight, oblique; whitish-ochreous, with some scattered black scales; a few fine strigulae of black irroration on costa; an undefined ochreous longitudinal mark towards fold before middle; central fascia narrow, oblique, irregular-edged, ochreous, suffused with dark grey on costa; an ochreous irregular streak close before termen from costa reaching three-fourths across wing, costal edge black; an interrupted black terminal line: cilia glossy whitish-ochreous. Hindwings with 3–5 rather remote; grey-whitish; cilia whitish.

Ngqeleni, West Pondoland (Swinny); in August, one specimen. Allied to *harmonia* Meyr., which was described as a Polychrosis, but appears to have no thoracic crest, and is therefore properly referable to Bactra. Type in Transvaal Museum.

Polychrosis stericta, n. sp.

♂. 12 mm. Head brownish, suffused with dark fuscous on crown and a central streak on forehead. Palpi brownish, irregularly irrorated with dark fuscous. Thorax brownish, somewhat mixed with dark fuscous. Abdomen fuscous. Forewings elongate, posteriorly dilated, costa slightly arched, apex obtuse, termen slightly rounded, rather oblique; white, irregularly mixed with pale grey and orcheous-brownish, with a few black strigulae; basal patch more strigulated with black, outer edge marked by a slightly curved brown streak; central fascia rather broad, straight, rather oblique, brown sprinkled with blackish, costal half mostly suffused with blackish except a costal spot of leaden-grey and whitish scales and a round whitish spot just within posterior edge in disc, dorsal edge suffused with blackish; a transverse-ovate brown blotch sprinkled with black resting on middle of termen; two small brown spots mixed with black on costa towards apex, and a larger and blacker one at apex; cilia pale brownish mixed with whitish, with a brown sub-basal line dotted with blackish and becoming black round apical spot. Hindwings grey; cilia whitish-grey, with grey sub-basal shade.

Haenertsburg (Swierstra); in December, one specimen. Type in Transvaal Museum.

GELECHIADAE.

Metzneria heptacentra, n. sp.

♂. 12–13 mm. Head and thorax whitish-ochreous somewhat mixed with brownish-ochreous. Palpi whitish-ochreous, sprinkled with dark brown points. Abdomen whitish-ochreous. Forewings elongate, very narrow, costa slightly arched, apex round-pointed, termen extremely obliquely rounded; whitish-ochreous, thinly sprinkled with brownish and dark fuscous, irregularly suffused with yellow-ochreous in disc and posteriorly; a small spot of blackish suffusion on base of costa, a dot beneath costa near base, and another on fold beyond this; a stronger black dot towards costa at two-fifths, one on fold beyond this, one in disc beyond middle, and one at $\frac{2}{3}$; a narrow suffused dark fuscous fascia along termen, preceded by a clear yellow-ochreous fascia; cilia yellow-ochreous, sprinkled with blackish towards base. Hindwings dark grey; cilia pale yellow-ochreous.

Woodbush Village (Swierstra); in December, two specimens. Type in Transvaal Museum.

Paltodora invida, n. sp.

♂. 26 mm. Head fuscous mixed with whitish. Palpi with second joint dark fuscous, apical edge white, terminal joint whitish sprinkled with dark fuscous. Thorax dark fuscous sprinkled with whitish, with a blackish stripe on each side of back. Abdomen dark fuscous, sides mixed with whitish. Forewings elongate, narrow, costa gently arched, apex slenderly produced, acute, termen sinuate, extremely oblique; dark fuscous, slightly whitish-sprinkled, streaked with ochreous-brown between veins in disc; a slender black streak along sub-median fold from near base to middle of wing, edged above by a whitish streak; a slender black streak in disc from middle to near $\frac{3}{4}$; a streak of blackish suffusion along upper part of termen to apex; cilia fuscous, basal half mixed with darker. Hindwings rather dark grey; cilia as in forewings.

Ngqeleni, West Pondoland (Swinny); in August, one specimen. Type in Transvaal Museum.

Epithectis carinata, n. sp.

♂. 10 mm. Head whitish, sprinkled with blackish. Palpi whitish, second joint irrorated with blackish except apex, terminal joint with blackish sub-basal and supra-median rings. Thorax whitish irrorated with dark fusous. Abdomen pale grey, two basal segments whitish-ochreous. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; whitish, densely irrorated with dark fuscous; stigmata black, first discal rather elongate, well-marked, plical rather before first discal, forming extremity of a blackish streak along fold from base, second discal represented by two or three scales; some undefined blackish dots on posterior part of costa and termen; cilia pale greyish. Hindwings grey; cilia pale greyish.

Moorddrift (Swierstra); in October, one specimen. Type in Transvaal Museum.

Telphusa acrophylla, n. sp.

♂. 11 mm. Head whitish-fuscous, face whitish. Palpi white, terminal joint finely lined with black. Thorax fuscous. Abdomen whitish. Forewings lanceolate, acute; 6 and 7 out of 8, 9 out of 8 near base; dark fuscous, towards apex with scales elongated and greyish towards base; a pale whitish-ochreous spot on costa at $\frac{2}{3}$, reaching half across wing, and tornal dot opposite; cilia fuscous, round apex with two black lines preceded by some slight whitish suffusion, beneath this with some scattered blackish points. Hindwings grey; cilia fuscous.

Moorddrift (Swierstra); in October, one specimen. Type in Transvaal Museum.

Stegasta variana Meyr.

Plat River, Waterberg District (Swierstra).

Gelechia cycota, n. sp.

♂. 10 mm. Head, palpi, and thorax blackish sprinkled with whitish points, terminal joint of palpi whitish with blackish sub-median ring and sub-apical band. Abdomen pale grey. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; dark fuscous somewhat mixed with blackish, irregularly sprinkled with whitish points, without defined markings; cilia grey, towards base sprinkled with dark fuscous. Hindwings 1, apex moderately produced; grey, paler towards base; cilia light grey.

Moorddrift (Swierstra); in October, one specimen. Type in Transvaal Museum.

Gelechia opaula, n. sp.

♀. 15 mm. Head and thorax whitish-ochreous faintly tinged with pinkish. Palpi whitish-ochreous sprinkled with dark fuscous points. Abdomen whitish-ochreous. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; yellow-ochreous, veins marked with streaks of flesh-colour irrorated with fuscous; slight dots of two or three blackish scales beneath costa near base, and on fold before plical stigma; stigmata minute, blackish, plical before first discal, second discal below middle; a few blackish scales indicating obscure dots round posterior part of costa and termen: cilia grey with rows of pale points, towards base tinged with pinkish. Hindwings 1, apex rather long-produced, acute, 6 and 7 stalked; grey; cilia pale grey.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum.

Gelechia prioleuca, n. sp.

♂♀. 13–14 mm. Head white. Palpi white, second joint dark fuscous except apex, anterior edge of terminal joint more or less blackish. Thorax white, patagia blackish. Abdomen grey. Forewings elongate, rather narrow, costa gently arched, apex round-pointed, termen almost straight, very oblique; purple-blackish; a white dorsal streak from base to tornus, attenuated near base, upper edge forming three triangular prominences between $\frac{1}{4}$ and tornus, thence continued as a slender irregular streak along termen to apex; a small white mark on costa towards apex; cilia yellowish-white, above apex dark fuscous. Hindwings 1, termen slightly sinuate; grey; cilia whitish-grey.

Woodbush Village (Swierstra); in December, two specimens. Type in Coll. Meyrick.

Gelechia naufraga, n. sp.

♀. 18 mm. Head ochreous-whitish. Palpi ochreous-whitish, second joint strongly compressed, basal half dark fuscous, terminal joint dark fuscous except externally. Thorax purple-blackish, with broad ochreous-whitish dorsal stripe. Abdomen ochreous-whitish sprinkled with fuscous. Forewings elongate, rather narrow, costa gently arched, apex tolerably pointed, termen very obliquely rounded; dark fuscous, slightly purplish-tinged, suffused with blackish towards dorsal streak; a moderately broad whitish-ochreous dorsal stripe from base to tornus, extremities pointed, upper edge slightly prominent at $\frac{1}{4}$ and in middle of wing, with a marked triangular prominence before tornus; cilia ochreous-whitish, above apex dark fuscous. Hindwings over 1, apex obtuse, termen almost straight, oblique; grey; cilia pale greyish, base whitish-ochreous.

Moorddrift (Swierstra); in October, one specimen. Types in Transvaal Museum.

Parapsectris fastidiosa, n. sp.

♀. 13 mm. Head yellow-whitish. Palpi white, second joint irregularly irrorated with blackish except apex, terminal joint with blackish supramedian band. Thorax whitish-yellowish, shoulders slightly sprinkled with dark fuscous. Abdomen ochreous-whitish, two basal segments more yellowish-tinged. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; 6 separate; ochreous-yellow; an oblique series of three minute black dots running from beneath costa near base towards a fuscous spot on dorsum before middle; a black dot beneath costa beyond $\frac{1}{3}$; a triangular fuscous spot on costa beyond middle, and an irregular blotch before apex; an irregular fuscous blotch on dorsum before tornus, its upper angles forming irregular projections reaching more than half across wing, between which is a black dot representing second discal stigma; cilia grey sprinkled with dark fuscous, on termen with a few black scales. Hindwings with apex rather long-produced, 6 and 7 long-stalked; grey; cilia light greyish-ochreous.

Moorddrift (Swierstra); in October, one specimen. Type in Transvaal Museum.

Anacampsis thoracica, n. sp.

♂. 16–19 mm. Head and thorax yellow-ochreous. Palpi whitish-ochreous, anterior edge of terminal joint blackish. Antennae dark fuscous. Abdomen dark grey. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; 6 separate; dark grey, finely irrorated with whitish-grey; a small yellow-ochreous basal patch, not reaching costa, edged with blackish dots in middle and on dorsum; plical and second discal stigmata blackish: cilia light greyish, basal half sprinkled with blackish points. Hindwings 1, apex long-produced, acute; grey; cilia light greyish.

Haenertsburg (Swierstra); in December, two specimens. Type in Transvaal Museum.

Anacampsis circaea, n. sp.

♂. 16–17 mm. Head brownish on crown, face whitish-ochreous. Palpi ochreous-yellowish, anterior edge of terminal joint blackish. Antennae dark fuscous. Thorax dark purplish-fuscous. Abdomen dark fuscous, with an ochreous-yellowish dorsal patch on second segment, ventral surface ochreous-yellow. Posterior tibiae whitish-ochreous sprinkled with purplish-fuscous. Forewings elongate-lanceolate; 6 separate; dark slaty-fuscous; stigmata small, black, discal approximated, plical obliquely before first discal; a small flattened-triangular pale ochreous-yellowish spot on costa at $\frac{2}{3}$: cilia dark grey. Hindwings 1, apex long-produced, acute; rather dark grey; cilia grey.

Haenertsburg (Swierstra); in December, two specimens. Type in Coll. Meyrick.

Lecithocera officialis, n. sp.

♀. 15 mm. Head and thorax dark purple-fuscous, sides of crown orange-yellow. Palpi yellowish, terminal joint sprinkled with dark fuscous anteriorly. Antennae yellow, indistinctly spotted with fuscous. Forewings elongate, narrow, costa gently arched, apex obtuse, termen very obliquely rounded; 2 and 3 short-stalked, 7 and 8 stalked, 7 to apex; dark purple-fuscous; cilia concolorous. Hindwings with 3 and 4 stalked; rather dark grey; cilia grey.

Haenertsburg (Swierstra); in December, one specimen. Type in Coll. Meyrick.

Schematistis, n. g.

Head with appressed scales; ocelli absent; tongue developed. Antennae $\frac{3}{4}$ in ♂ serrate, minutely ciliated, basal joint elongate, without pecten. Labial palpi very long, slightly curved, sub-ascending, second joint with rough projecting scales above and long dense projecting tuft beneath, terminal joint shorter than second, slender, acute. Maxillary palpi very short, filiform, appressed to tongue. Posterior tibiae clothed with hairs above. Forewings with 2 and 3 stalked, 7 and 8 stalked, 7 to apex, 11 from middle. Hindwings 1, trapezoidal, termen hardly sinuate beneath apex, cilia $\frac{3}{4}$; 3 from angle, 4–7 tolerably parallel.

Allied to Brachmia, of which it is a development, distinguished by the quite peculiar neuration of hindwings, and structure of palpi.

Schematistis analoxa, n. sp.

♂. 14 mm. Head and thorax fuscous sprinkled with white. Palpi dark fuscous irrorated with whitish, terminal joint whitish. Abdomen grey. Forewings elongate, rather narrow, costa gently arched, faintly sinuate in middle, apex obtuse, termen almost straight, oblique; ashy-grey, sprinkled with whitish; costal edge suffused with dark fuscous from base to beyond middle; three undefined fasciae of dark fuscous suffusion, first broad, from middle of costa to dorsum before middle, obliquely interrupted above middle, second narrow, from $\frac{5}{6}$ of costa to $\frac{2}{3}$ of dorsum, third moderate, terminal, confluent with second above middle; second discal stigma dark fuscous: cilia greyish, with several series of dark fuscous scales tipped with whitish points, base whitish. Hindwings grey; cilia pale grey, base whitish.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum.

Brachmia verberata, n. sp.

♂♀. 12–13 mm. Head and thorax whitish-ochreous, sprinkled with fuscous or dark fuscous. Palpi whitish-ochreous, second joint irrorated with dark fuscous, terminal joint with blackish median band. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, narrow, costa slightly arched, faintly sinuate in middle, apex round-pointed, termen somewhat sinuate, oblique; 2 and 3 stalked, 7 to apex, 8 and 9 out of 7; whitish-ochreous suffused with brownish and sprinkled with dark fuscous, sometimes with a few whitish scales; an undefined basal patch of dark fuscous suffusion, outer edge running from $\frac{2}{5}$ of costa to $\frac{1}{5}$ of dorsum; three undefined fasciae of dark fuscous suffusion, first from beyond middle of costa to before middle of dorsum, second at $\frac{4}{5}$, parallel to termen, third terminal; stigmata small, blackish, plical slightly before first discal; cilia whitish-ochreous with a dark fuscous ante-median line, basal portion somewhat mixed with dark fuscous. Hindwings grey; cilia ochreous-whitish, with pale grey ante-median shade.

Haenertsburg and Woodbush Village (Swierstra); in December, two specimens. Type in Coll. Meyrick, co-type in Transvaal Museum.

Trichotaphe pyrrhitis, n. sp.

♂. 15–16 mm. Head and thorax ferruginous-brownish-ochreous, face and sides of crown paler. Palpi whitish-ochreous, second joint brown suffused with dark fuscous except at apex, smooth beneath, terminal joint longer than second. Abdomen dark grey, anal tuft pale ochreous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen rounded, oblique; ferruginous-brownish, irregularly mixed with rather dark grey; costal edge ochreous; stigmata deep ferruginous-brown, plical beneath first discal, a similar less marked dot midway between first discal and base; a more or less developed small pale ochreous spot on costa at $\frac{2}{3}$; cilia ferruginous-ochreous, on tornus suffused with pale grey. Hindwings dark grey; cilia pale grey.

Woodbush Village, in December (Swierstra); Pietersburg, in February (Janse); two specimens. Type in Transvaal Museum.

Anarsia gravata, n. sp.

♂. 13 mm. Head ochreous-white, lower part of face dark fuscous. Palpi blackish, towards apex white. Antennae dark fuscous. Thorax white mixed with blackish, shoulders black. Abdomen grey suffused with whitish, anal tuft ochreous-whitish. Forewings elongate, narrow, gradually narrowed from $\frac{1}{4}$, costa gently arched, faintly sinuate in middle, apex round-pointed, termen extremely obliquely rounded ; pale grey suffused with white, with scattered black scales ; markings grey, irrorated and suffused with black ; a basal patch occupying nearly one-fourth of wing ; a dorsal streak from this to two dorsal spots in and beyond middle of dorsum, second connected with apex of a triangular blotch on middle of costa ; an irregular blotch along termen from apex to tornus ; cilia grey (imperfect). Hindwings grey, darker at apex, thinly scaled anteriorly and becoming hyaline at base ; cilia grey.

Woodbush Village (Swierstra) ; in December, one specimen. Type in Transvaal Museum.

Chelaria Haw.

Having now investigated the species of this group in my possession (principally from the Indian region), I find that although there is great variation of structure in the form and number of tufts of the palpi, and also in the relation of veins 6–8 of the forewings, natural genera cannot properly be founded on these differences in this instance, and therefore *Semodictis* Meyr. and *Allocota* Meyr. must be merged in *Chelaria*, as well as some forms from other regions which need not be specified here.

Chelaria triannulata, n. sp.

♂. 9 mm. Head and thorax ochreous-whitish tinged with grey, shoulders dark fuscous. Palpi whitish, second joint irrorated with blackish except apex, with moderate rough tuft beneath, terminal joint somewhat thickened with slightly rough scales, with black median band and sub-basal and sub-apical rings. Abdomen whitish-grey, anal tuft ochreous-whitish. Forewings elongate, narrow, costa slightly arched, faintly sinuate in middle, apex round-pointed, termen extremely obliquely rounded ; 6 separate ; whitish-ochreous somewhat mixed with pale ochreous and slightly sprinkled with grey ; costal edge suffused with blackish irroration from base to $\frac{2}{3}$, with a flattened-triangular blackish spot in middle of costa ; a black dot beneath costa near base ; sitgmata black, discal remote, plical obliquely before first discal ; a blackish spot on dorsum before tornus, connected with second discal stigma by a short outwardly oblique streak of blackish irroration ; some groups of a few blackish scales round posterior part of costa and termen : cilia light greyish. Hindwings with apex pointed, termen beneath apex oblique, slightly bisinuate, 3 and 4 closely approximated at base ; grey, paler and thinly scaled anteriorly ; cilia light grey.

Woodbush Village (Swierstra) ; in December, one specimen. Type in Coll. Meyrick.

Chelaria solutrix, n. sp.

♂. 12 mm. Head and thorax dark grey sprinkled with whitish points. Palpi dark fuscous irregularly sprinkled with whitish points, second joint with moderate compact rounded apical tuft beneath, terminal joint thickened with somewhat rough scales towards middle posteriorly. Abdomen grey. Forewings elongate, narrow, costa gently arched, apex round-pointed, termen extremely obliquely rounded, surface with some slight irregularly placed tufts of raised scales, especially on costa; 6 separate; brownish, irrorated with grey, whitish, and dark fuscous; an obscure streak of blackish suffusion along costa from about ¼ to beyond middle, and four small spots of blackish suffusion on costa posteriorly; cilia light fuscous sprinkled with whitish points, with a darker ante-median shade, and towards base sprinkled with dark fuscous. Hindwings with apex round-pointed, termen beneath apex oblique, slightly bisinuate, 3–5 closely approximated at base; grey; cilia light grey.

Woodbush Village (Swierstra); in December, one specimen. Type in Coll. Meyrick.

Ypsolophus tephrodes Meyr.

♂. 16 mm. Differs from ♀ described in having a well-defined moderate dark grey terminal fascia irrorated with black; otherwise agrees, and is probably correctly referred.

Woodbush Village (Swierstra); in December, one specimen.

Symmoca crocodesma, n. sp.

♂. 10 mm. Head deep ochreous-yellow. Palpi ochreous-yellow, base dark fuscous. Thorax dark purplish-fuscous. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex round-pointed, termen very obliquely rounded; light purplish-grey densely irrorated with black; a moderate deep ochreous-yellow rather irregular-edged median transverse fascia; an irregular ochreous-yellow spot on tornus and a slightly larger one on costa opposite, almost meeting; cilia whitish-grey, towards base sprinkled with blackish. Hindwings grey; cilia whitish-grey.

Woodbush Village (Swierstra); in December, one specimen. Type in Coll. Meyrick.

COSMOPTERYGIDAE.

Stagmatophora phanoptila, n. sp.

♂. 17-22 mm. Head brownish mixed with dark fuscous. Palpi brownish-whitish, second and terminal joints each with basal and sub-apical dark fuscous rings. Antennae blackish. Thorax brownish, suffused with blackish except posterior half of patagia. Abdomen dark fuscous, three basal segments ochreous, segmental margins mixed with whitish. Forewings elongate-lanceolate, apex very long-pointed, acute; purplish closely irrorated with blackish; a brownish streak sprinkled with dark fuscous along dorsum from base to tornus; bright metallic-shining pale ochreous spots of raised scales on upper edge of this streak at ⅓ of wing, beyond middle, and at tornus, one on costa slightly beyond this last, and a dot at apex; cilia purplish-grey sprinkled with blackish, towards tornus paler and ochreous-tinged. Hindwings with 6 and 7 stalked; grey; cilia greyish, suffused with pale ochreous towards base.

Haenertsburg (Swierstra); in December, two specimens.

Walsingham's *Laverna quinquecristata* is also a species of this genus, nearly allied to the above, and belonging to the typical section of the genus. Type in Coll. Meyrick.

Limnoecia recidiva, n. sp.

♀. 13 mm. Head whitish-ochreous. Palpi ochreous-whitish, second joint with blackish sub-apical ring, terminal joint streaked with blackish on sides. Antennae blackish, apical half white (extreme apex broken). Thorax blackish, with ochreous-whitish dorsal stripe. Abdomen dark grey, apex ochreous-whitish. Forewings elongate, narrow, costa moderately arched, apex pointed, termen extremely obliquely rounded; purple-blackish, markings ochreous-whitish; a narrow dorsal streak from base to tornus; three fascia-form streaks from costa, reaching more than half across wing, more or less nearly meeting irregular strigulae rising out of dorsal streak, first from $\frac{1}{5}$ of costa, outwardly oblique, second in middle, direct, third from beyond $\frac{3}{4}$ inwardly oblique; cilia fuscous mixed with blackish, with an ochreous-whitish tornal patch. Hindwings dark grey; cilia grey.

Waterberg (Jutrzencka); one specimen. Type in Transvaal Museum.

Limnoecia sclerodes Meyr.

Plat River, Waterberg District (Swierstra). Described as a Stagmatophora, but vein 6 of forewings appears to be really separate though nearly approximated to 7.

Mompha bathrota, n. sp.

♀. 15 mm. Head whitish-ochreous. Palpi whitish-ochreous, base dark fuscous, terminal joint with a dark fuscous sub-apical ring. Antennae and thorax blackish. Abdomen grey, apex whitish-ochreous. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; whitish-ocherous; a narrow blackish-grey basal fascia; a patch of brown irroration on costa at $\frac{1}{4}$; a black dot in disc at $\frac{2}{5}$; a blackish elongate mark on costa beyond middle, and a blackish blotch on dorsum before tornus, connected by a broad fascia of brown irroration; a suffused brown apical patch nearly extending to this, including a spot of blackish irroration on costa towards apex; cilia pale ochreous-yellowish, on basal half with undefined spots or bars of blackish irroration, beneath tornus pale grey. Hindwings with 6 and 7 stalked; grey; cilia whitish-grey.

Haenertsburg (Swierstra); in December, one specimen. Type in Coll. Meyrick.

Pachyrhabda unctoria, n. sp.

♀. 9 mm. Head and thorax whitish-yellowish. Palpi whitish. Antennae whitish, tinged with grey on apical half. Posterior tibiae whitish, suffused with blackish-grey above an apical half. Forewings very narrow, widest near base, thence attenuated to acute apex; light ochreous-yellowish suffused with grey, margins of apical third suffused with glossy whitish; costal edge dark fuscous towards base; cilia light grey. Hindwings dark grey; cilia grey.

Haenertsburg (Swierstra); in December, one specimen. Type in Transvaal Museum.

SCYTHRIDAE.

Scythris rivigera, n. sp.

♂. 13 mm. Head and thorax pale greyish-ochreous. Palpi greyish, towards base white. Antennae dark fuscous. Abdomen whitish-ochreous. Forewings elongate-lanceolate, long-pointed, acute; grey, irregularly and suffusedly mixed with whitish-ochreous, and posteriorly with whitish; a suffused whitish median streak from base to middle; cilia greyish-ochreous, base mixed with whitish. Hindwings with 5 absent; grey; cilia greyish-ochreous.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum.

Scythris anthracodelta, n. sp.

♂. 18 mm. Head grey, crown blackish-grey. Palpi dark grey sprinkled with whitish. Thorax pale grey, sprinkled and anteriorly suffused with blackish. Abdomen pale ochreous-grey. Forewings elongate, narrow, long-pointed, acute, termen faintly sinuate, extremely oblique; 5 present; pale grey, thinly sprinkled with black points; a triangular blackish blotch on dorsum before middle, reaching half across wing; an indistinct blackish dot in disc before $\frac{3}{4}$: cilia light greyish-ochreous. Hindwings nearly 1, 4 and 5 stalked; grey; cilia light greyish-ochreous.

Woodbush Village (Swierstra); in December, one specimen. Type in Coll. Meyrick.

Scythris fonticola, n. sp.

♂. 13 mm. Head grey, sides of crown whitish. Palpi dark grey mixed with white. Antennae dark grey. Thorax grey, sides suffused with white. Abdomen grey, anal tuft whitish-ochreous, undersurface ochreous-whitish. Forewings elongate-lanceolate, acute; grey, with a faint purplish tinge; stigmata represented by very obscure spots of darker suffusion, discal approximated, plical obliquely before first discal; a rather broad white sub-median streak from base (where it extends suffusedly to basal portion of dorsum) to first discal stigma, impressed beneath by plical, and continued by some scattered white scales to and round second discal; a suffused white dot at apex: cilia ochreous-grey. Hindwings $\frac{2}{3}$, 5 separate; grey; cilia ochreous-grey.

Moorddrift (Swierstra); in October, one specimen. Type in Coll. Meyrick.

OECOPHORIDAE.

Borkhausenia acida, n. sp.

♀. 12 mm. Head and thorax pale yellow-ochreous. Palpi whitish-ochreous, irrorated with dark fuscous except towards apex. Abdomen grey, segmental margins whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex acute, termen faintly sinuate, extremely oblique; glossy light yellow-ochreous, apical $\frac{2}{5}$ strewn with scattered blackish points; discal stigmata blackish, second forming apex of an erect transverse mark of blackish irroration from tornus; cilia whitish-ochreous, towards base somewhat sprinkled with blackish points. Hindwings very acute; grey; cilia whitish-ochreous.

Haenertsburg (Swierstra); in December, one specimen. Type in Transvaal Museum.

Alloclita xylodesma, n. sp.

♀. 17 mm. Head ochreous-whitish, sides of crown more ochreous, lateral edge dark fuscous. Palpi ochreous-whitish, second joint rather short, base dark fuscous, terminal joint longer than second, with dark fuscous sub-apical band. Thorax dark fuscous. Abdomen fuscous, segmental margins whitish-ochreous. Forewings elongate-lanceolate; dark fuscous, faintly purplish-tinged; a moderately broad ochreous-white transverse fascia before $\frac{1}{3}$, partially edged with black and then with brown suffusion, posterior edge angulated below middle, black marginal dots above and below this indicating stigmata; a triangular ochreous-white spot on costa at $\frac{2}{3}$, and an ochreous-white dot on tornus, connected by a narrow brown fascia in which is a small black spot representing second discal stigma; an ochreous-white apical dot; cilia fuscous mixed with dark fuscous. Hindwings dark grey; cilia fuscous.

Waterberg (Jutrzencka); one specimen. Type in Transvaal Museum. I have little doubt that Walsingham's *Laverna gambiella*, which I have not seen, is an allied species of this genus.

Cnemidolophus Wals.

The generic reference of the following species is not fully established; its structural characters are as follows:

Head with loosely appressed scales; ocelli present; tongue developed. Antennae $\frac{3}{4}$, basal joint moderate, with pecten. Labial palpi very long, recurved, second joint smooth-scaled, terminal joint as long as second, slender, acute. Maxillary palpi very short, filiform, appressed to tongue. Posterior tibiae clothed with hairs above. Forewings with 2 from towards angle, 7 and 8 stalked, 7 to apex, 11 from middle. Hindwings 1, elongate-ovate, termen slightly sinuate beneath apex, cilia 1; 3 and 4 connate, 5–7 tolerably parallel.

Cnemidolophus cyananthes, n. sp.

♀. 18 mm. Head fuscous. Palpi ferruginous-yellow, second joint with dark fuscous sub-apical ring, terminal joint with dark fuscous sub-basal and supra-median rings, and whitish sub-apical ring. Thorax dark fuscous mixed with fulvous-brown, with a shining indigo-blue transverse band. Abdomen dark fuscous, segmental margins whitish, apex yellowish. Forewings elongate, costa gently arched, apex pointed, termen somewhat sinuate, very oblique; fulvous-brown; four very irregular shining indigo-blue partly black-margined transverse fascia, first from costa near base to $\frac{1}{4}$ of dorsum, an additional spot on costa beyond this, second and third direct, before and beyond middle, fourth from beneath costa at $\frac{2}{3}$ to tornus; irregular transverse black spots in disc in middle, and between third and fourth fasciae, first connected with costa by an ochreous-white spot, and margined posteriorly with ochreous-white on its upper half; an irregular triangular ochreous-white spot on costa beyond $\frac{3}{4}$; a spot of black suffusion at apex; cilia fuscous mixed with black (imperfect). Hindwings dark fuscous; cilia fuscous.

Moorddrift (Swierstra); in October, one specimen. Type in Transvaal Museum.

Depressaria trimenella Wals.

Ngqeleni, West Pondoland, in August (Swinny).

Depressaria clausulata, n. sp.

♀. 22 mm. Head dark reddish-fuscous sprinkled with whitish. Palpi fuscous sprinkled with whitish, second joint mixed with blackish, terminal joint with suffused blackish basal and supra-median bands. Thorax ochreous-brownish, dorsally suffused with reddish-fuscous anteriorly and whitish posteriorly, transversely marked with blackish between these, collar grey. Abdomen grey, sides mixed with whitish. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen obliquely rounded ; 2 and 3 stalked ; chocolate-brown, towards costa somewhat suffused with pale ochreous irroration ; costal edge grey strigulated with blackish irroration ; base of dorsum narrowly whitish edged above by some black scales and a patch of dark purple-fuscous suffusion; first discal stigma black, with a similar dot obliquely before and above it, both edged posteriorly with some white scales ; second discal stigma white, and there is a group of several white scales midway between first and second ; some undefined black dots on termen : cilia fuscous sprinkled with pale rosy. Hindwings grey, becoming whitish-grey towards base ; cilia grey-whitish, suffused with grey round apex.

Ngqeleni, West Pondoland (Swinny) ; in May, one specimen. Type in Transvaal Museum.

Cryptolechia transfuga, n. sp.

♂. 17 mm. Head white, brownish in centre of crown. Palpi white, second joint fuscous except apex, terminal joint fuscous anteriorly. Antennae fuscous. Thorax white, with a brownish dorsal stripe, patagia with suffused dark brown stripe. Abdomen whitish. Forewings elongate, costa moderately arched, apex pointed, termen very obliquely rounded ; 7 to termen ; white ; costal edge infuscated towards base ; a brownish streak from base beneath costa to costa beyond middle, edged with dark fucsous above, and with a dark fuscous cloudy spot on lower edge above middle of wing ; a broad brownish dorsal streak from base to $\frac{3}{4}$, attenuated posteriorly, edged above with dark fuscous anteriorly and confluent with sub-costal; stigmata large, irregular, undefined, blackish-fuscous, plical beyond first discal, these traversed by an oblique brownish bar joining sub-costal and dorsal streaks, from between them a brownish streak runs to termen above tornus, touching second discal beneath ; a brownish streak marked with dark fuscous from second discal stigma to costa at $\frac{4}{5}$; a brownish streak marked with dark fuscous along termen : cilia whitish, with a fuscous basal line. Hindwings fuscous-whitish ; cilia white.

Woodbush Village (Swierstra) ; in December, one specimen. Type in Coll. Meyrick.

Macrosaces citrodesma, n. sp.

♀. 12 mm. Head dark bronzy-fuscous. Palpi dark fuscous with a few yellowish scales. Antennae $\frac{4}{5}$. Thorax dark purplish-fuscous. Abdomen dark grey. Forewings elongate, rather narrow, costa gently arched, apex round-pointed, termen very obliquely rounded ; 3 present ; dark purplish-fuscous ; a blackish dot beneath costa near base, accompanied with two or three pale yellowish scales ; a narrow rather irregular direct pale yellow transverse fascia at $\frac{2}{5}$, edged with blackish ; a group of pale yellowish scales in disc at $\frac{3}{5}$, surrounded with blackish suffusion; a slender pale yellow transverse mark on tornus, and a similar mark on costa opposite; cilia dark grey, towards base mixed with blackish. Hindwings with 5 absent; dark fuscous; cilia rather dark grey.

Woodbush Village (Swierstra); in December, one spcimen. Type in Coll. Meyrick.

XYLORYCTIDAE.

Procometis limitata, n. sp.

♀. 32 mm. Head and thorax whitish irrorated with fuscous. Palpi whitish sprinkled with dark fuscous, second joint with loose projecting scales at apex beneath, terminal joint $\frac{2}{3}$ of second. Abdomen fuscous-whitish. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded; pale fuscous irrorated with whitish, with scattered dark fuscous scales; costal edge white from near base to beyond middle; a fine median streak of white suffusion from base to $\frac{2}{3}$; cilia whitish sprinkled with fuscous. Hindwings grey-whitish; cilia whitish.

Waterberg (Jutrzencka); one specimen. Type in Transvaal Museum. Nearest to *P. acharma*, but distinguished by narrower forewings, with white costal edge, and longer terminal joint of palpi.

Odites natalensis Wals.

Woodbush Village, in December (Swierstra).

Odites balsamias, n. sp.

♂. 17 mm. Head and thorax yellowish-white. Palpi whitish, second joint suffused with light fulvous-ochreous except apex. Antennal ciliations 2$\frac{1}{2}$. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa slightly arched, apex obtuse, termen obliquely rounded; yellow-whitish, veins faintly yellower; costal edge pale fulvous-ochreous; cilia whitish-yellowish. Hindwings pale whitish-ochreous tinged with grey; cilia light yellowish.

Moorddrift (Swierstra); in October, one specimen. Type in Transvaal Museum.

STENOMIDAE.

Stenoma modicola, n. sp.

♀. 24 mm. Head, palpi, and thorax ochreous-yellow, terminal joint of palpi extremely short. Abdomen grey, apex yellowish. Forewings sub-oblong, costa gently arched, apex obtuse, termen obliquely rounded; deep ochreous-yellow; cilia concolorous. Hindwings rather dark grey; cilia light yellowish, with grey sub-basal shade.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum.

Stenoma stolida, n. sp.

♀. 25–32 mm. Head dark fuscous, face and sides of crown whitish-mixed. Palpi rather short, dark fuscous sprinkled with white. Thorax dark fuscous sprinkled with white, with a post-median transverse ridge of scales suffused with whitish anteriorly. Abdomen greyish-ochreous. Forewings elongate, costa moderately arched, apex obtuse, termen slightly rounded, oblique; fuscous, suffused with dark fuscous towards costa and on veins posteriorly, elsewhere suffusedly mixed with grey-whitish; a transverse linear blackish mark on end of cell, edged with whitish suffusion; a terminal series of blackish dots; cilia fuscous suffusedly mixed with whitish. Hindwings grey, lighter anteriorly; cilia grey-whitish, with grey sub-basal line.

Woodbush Village (Swierstra); in December, two specimens. Type in Coll. Meyrick.

Palaetheta Meyr.

In the generic characters vein 2 of forewings should be stated to rise from $\frac{4}{5}$ to $\frac{5}{6}$ of cell, 3 from angle (not 2 and 3 stalked, as given).

Palaetheta innocua, n. sp.

♀. 17 mm. Head and thorax ochreous-white. Palpi whitish, second joint suffused with pale ochreous except towards apex, tuft short but rather broad. Abdomen pale ochreous. Forewings elongate, costa moderately arched, apex round-pointed, termen rounded, rather strongly oblique; ochreous-white; cilia concolorous. Hindwings grey; cilia ochreous-white.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum.

ETHMIADAE.

Ethmia coscineutis, n. sp.

♂♀. 30 mm. Head, palpi, and thorax ochreous-white, thorax with two dorsal black dots near anterior edge, two near posterior, and two on shoulders. Abdomen dark fuscous, anal segment and margins of penultimate ochreous-yellow, margins of other segments whitish, ventral surface ochreous-whitish. Forewings elongate, costa moderately arched, apex obtuse, termen nearly straight, rather oblique; ochreous-white; costal edge finely black towards base; two black dots near base, three in a transverse series at $\frac{1}{4}$, one towards costa at $\frac{2}{5}$, one below fold before middle, one above middle of disc, one within upper angle of cell, one just beyond this, one beyond lower angle of cell, one beneath costa at $\frac{5}{6}$, one towards dorsum above middle, and seven round apex and termen; cilia ochreous-white. Hindwings ochreous-whitish tinged with grey, greyer towards costa posteriorly, especially in ♂; cilia white.

Waterberg (Jutrzencka); Durban, Natal, in October (Leigh); two specimens. Types in Coll. Meyrick.

Ethmia dactylia, n. sp.

♀. 22 mm. Head pale yellowish. Palpi yellow-whitish, second joint with a lateral blackish streak, terminal joint with some black scales. Thorax whitish-grey, collar whitish with anterior edge blackish, patagia with a small blackish spot at apex. Abdomen light yellowish, towards middle suffused with grey, ventral surface light grey. Forewings elongate, costa gently arched, apex obtuse, termen obliquely rounded; whitish-grey; five black dots edged with whitish, viz., one beneath costa near base, one on fold at $\frac{1}{4}$, one in disc at $\frac{2}{5}$, one on fold beneath middle, and one in disc at $\frac{3}{4}$, this last largest; a series of ten black dots round apical portion of costa and termen; cilia pale grey sprinkled with whitish points.

Hindwings yellow-whitish, toward apex suffused with pale grey; cilia yellow-whitish, more yellowish-tinged on dorsum.

Rooiplaat, Pretoria District (Swierstra); in March, one specimen. Allied to circumdatella. Type in Transvaal Museum.

PLUTELLIDAE.

Exaulistis, n. g.

Head with appressed scales; ocelli small; tongue short. Antennae $\frac{1}{2}$, basal joint moderate, without pecten. Labial palpi very short, loosely scaled, porrected, terminal joint obtuse. Maxillary palpi rudimentary. Posterior tibiae smooth-scaled. Forewings with 1 b basally furcate, 2 from near angle, 7 to apex, 11 from middle, secondary cell defined. Hindwings 1, elongate-ovate, cilia $\frac{1}{6}$; 3 and 4 approximated at base, 5–7 tolerably parallel.

Allied to Mieza.

Exaulistis trichogramma, n. sp.

♀. 33 mm. Head whitish-ochreous. Palpi dark fuscous. Antennae dark grey. Thorax whitish-ochreous, with dorsal line, a dot on each shoulder, and one on each side near posterior extremity blackish. Abdomen yellow-ochreous. Forewings elongate, rather dilated posteriorly, costa moderately arched, apex rounded-obtuse, termen rounded, rather oblique; whitish-ochreous, slightly tinged with fuscous; costal edge dark fuscous towards base; a blackish dot on base of dorsum, and one near base in middle; all veins marked with very fine dark fuscous lines, obsolescent towards extremities; a dark fuscous longitudinal mark in disc before middle on parting-vein, and a crescentic dark fuscous mark on transverse vein between 4 and 6; a series of sharply marked rather large black dots on termen and apical part of costa; cilia whitish-ochreous. Hindwings whitish-ochreous; a series of black dots round apex and termen, becoming obsolete towards tornus; cilia whitish-ochreous.

Ngqeleni, West Pondoland (Swinny); in January, one specimen. Type in Transvaal Museum.

Gymnogramma flavivittella Wals.

Woodbush Village, in December (Swierstra). The ♂ has an expansible hairpencil lying along costa of hindwings from base beneath forewings, not mentioned in the original description; in the forewings veins 3 and 4 are stalked, in the hindwings 3 and 4 connate or closely approximated at base, 7 rising out of middle of 6, running into 8. The specific name is originally misprinted flavivitella.

Gymnogramma pyrozancla, n. sp.

♂. 26 mm. Head and thorax pale whitish-yellowish, thorax marked in middle with orange-red (partly defaced). (Palpi broken.) Abdomen orange. Forewings elongate, moderate, costa gently arched, apex obtuse, termen obliquely rounded; all veins separate; pale whitish-yellowish; costal edge orange-red towards base; a short orange-red longitudinal streak above middle towards base; an orange-red sub-dorsal streak almost from base to $\frac{1}{3}$, thence curved upwards to middle of wing and downwards to tornus; three orange-red interneural dashes beyond upper angle of cell; cilia pale whitish-yellowish, base faintly orange-tinged. Hindwings with 3 and 4 connate, 6 and 7 long-stalked; orange, deeper towards apex; cilia yellowish-orange.

Shilouvane (Junod); in November, one specimen. Type in Transvaal Museum.

Epermenia praefumata Meyr.

Woodbush Village, in December (Swierstra).

Platybathra n. g.

Head smooth-scaled; ocelli absent; tongue developed. Antennae nearly 1, in ♂ shortly ciliated, basal joint elongate, flattened and slightly concave beneath, with pecten of scales. Labial palpi moderate, curved, ascending, slender, smooth-scaled, terminal joint as long as second, acute. Maxillary palpi rudimentary. Posterior tibiae rough-haired above. Forewings with 3 absent, 4 absent, 6 and 7 stalked, 7 to costa, 8 absent, 11 from beyond middle. Hindwings $\frac{1}{2}$, narrow-lanceolate; cilia 5; 4 absent, 6 and 7 approximated towards base.

Apparently allied to Coleophora and Batrachedra.

Platybathra ganota, n. sp.

♂♀. 15 mm. Head, palpi, and thorax pale ochreous. Antennae dark grey, basal joint pale ochreous. Abdomen whitish-ochreous. Forewings elongate-lanceolate, acute; pale glossy ochreous; basal third of costa suffused with blackish; cilia pale ochreous. Hindwings grey; cilia pale ochreous.

Woodbush Village (Swierstra); in December, two specimens. Type in Coll. Meyrick.

Coleophora leucaula, n. sp.

♀. 13 mm. Head and thorax white. Palpi whitish. Antennae white, ringed with fuscous, basal joint white, rough-scaled anteriorly. Forewings elongate-lanceolate, acute; brownish-ocherous, becoming brownish posteriorly; a slender white costal streak from base to $\frac{2}{3}$; cilia pale brownish-ochreous. Hindwings grey; cilia pale grey.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum. Approaches the European Limosipennella, but forewings rather broader, and white costal streak extended further posteriorly.

Coleophora efflua, n. sp.

♂. 13 mm. Head, palpi, and thorax white. Antennae whitish, basal joint white, with long rough projecting scales on anterior edge. Abdomen grey, suffused with ochreous-yellowish towards apex, anal tuft whitish-ochreous. Forewings lanceolate; pale ochreous-yellowish; a suffused white costal streak from base to $\frac{3}{4}$; dorsal half, through the confluence of longitudinal streaks, almost wholly suffused with white from base to apex; cilia pale whitish-ochreous. Hindwings grey; cilia pale whitish-ochreous.

Woodbush Village (Swierstra); in December, one specimen. Type in Coll. Meyrick.

Coleophora scariphota, n. sp.

♀. 10 mm. Head whitish-brownish, sides of crown white. Palpi white. Antennae white ringed with fuscous. Thorax white with brownish dorsal line and spots on shoulders. Abdomen grey-whitish. Forewings lanceolate, apex long-pointed, acute; pale brownish-ochreous; a white costal streak from base to $\frac{2}{3}$; veins fold, and dorsum marked with white streaks; cilia ochreous-whitish. Hindwings light grey or whitish-grey; ochreous-whitish.

Haenertsburg (Swierstra); in December, two specimens. Type in Transvaal Museum.

TINEIDAE.

Nepticula insulata, n. sp.

♀. 8 mm. Head ferruginous-ochreous. Antennae grey, eyecaps ochreous-whitish. Tongue short, distinct. Thorax pale brassy-ochreous. Abdomen slaty-grey. Forewings lanceolate; iridescent pale brassy-ochreous, with a few scattered black specks posteriorly; costal edge blackish anteriorly; a spot of blackish irroration in disc slightly before middle; an apical patch of bluish-grey and black scales; cilia pale whitish-ochreous tinged with grey. Hindwings rather dark purplish-grey; cilia greyish.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum. This is the largest known Nepticula; coupled with the presence of a distinct tongue, this probably indicates that it is a primitive form.

Bedellia somnulentella Zell.

Haenertsburg, in December (Swierstra).

Gephyristis oxystyla, n. sp.

♂. 9 mm. Head whitish-ochreous, frontal tuft dark fuscous. Palpi dark fuscous. Antennae 1, ochreous-whitish, becoming dark fuscous at base. Thorax whitish-ochreous, patagia blackish. Abdomen whitish. Forewings narrow-lanceolate, long-pointed, acute, 5 and 6 out of 7, 8 out of 7 near base; dark fuscous; a whitish-ochreous streak along dorsum and termen from base to apex, margined with blackish above, upper edge indented before and beyond tornus, slender and irregular towards apex; cilia whitish-ochreous, above apex mixed with dark fuscous. Hindwings whitish-grey; cilia grey-whitish.

Moorddrift (Swierstra); in October, one specimen. Type in Coll. Meyrick.

Stemagoris, n. g.

Head densely rough-haired; ocelli present; tongue obsolete. Antennae almost 1, in ♂ simple, basal joint short, without pecten. Labial palpi moderate, porrected, second joint with projecting lateral bristles at apex, terminal joint shorter than second, loosely scaled. Maxillary palpi moderately long, several-jointed, folded, filiform. Posterior tibiae clothed with long hairs above. Forewings with 2 from angle, 3 absent, 7 to costa, 11 from before middle. Hindwings $\frac{3}{4}$, lanceolate, cilia 2; 3 absent, 4–7 separate.

Allied to Tinea.

Stemagoris asylaea, n. sp.

♂. 9 mm. Head light fulvous-ochreous. Palpi whitish-ochreous, base of terminal joint infuscated. Antennae, thorax, and abdomen whitish-ochreous. Forewings lanceolate, apex produced, acute; glossy whitish ochreous; cilia concolorous. Hindwings and cilia ochreous-whitish.

Haenertsburg (Swierstra); in December, one specimen. Type in Transvaal Museum.

Monopis perforata, n. sp.

♂♀. 16–19 mm. Head ochreous-yellowish. Palpi and antennae dark fuscous. Thorax blackish, with broad ochreous-yellowish dorsal stripe. Abdomen dark grey. Forewings elongate, narrow, costa gently arched, apex obtuse, termen extremely obliquely rounded; 2 connate with stalk of 3 and 4, other veins separate; purple-blackish; a light ochreous-yellowish dorsal streak from base to near tornus, widest before middle, attenuated to extremities; a semi transparent whitish dot in middle of disc; cilia dark purplish-fuscous, with rows of blackish points. Hindwings with all veins separate; grey, with brassy-golden iridescence; cilia ochreous-whitish tinged with grey.

Haenertsburg (Swierstra), in December, Capetown; three specimens. Type in Coll. Meyrick. I have previously erroneously recorded this insect as identical with ethelella from Australia and New Zealand; it may be distinguished from that species by the much smaller discal spot, and absence of pale irroration round margins.

Tinea rejectella Walk.

Moorddrift, in October (Swierstra).

Tinea penetrata, n. sp.

♀. 11 mm. Head whitish-yellowish, face ochreous-yellowish. Palpi and antennae dark fuscous. Thorax whitish-ochreous, shoulders fuscous. Abdomen grey. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen very obliquely rounded; purplish-grey irrorated with dark fuscous; a streak of whitish-ochreous suffusion along dorsum from base to near tornus, attenuated posteriorly; cilia greyish sprinkled with dark fuscous, beneath tornus ochreous-whitish. Hindwings with 5 and 6 stalked; grey, with bluish reflections; cilia light grey.

Woodbush Village (Swierstra); in December, one specimen. Type in Transvaal Museum.

Tinea psacadias, n. sp.

♂♀. 11–13 mm. Head whitish-ochreous, crown tinged with yellow-ochreous. Palpi dark fuscous, apex whitish-ochreous. Antennae grey. Thorax whitish-ochreous, patagia blackish. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa moderately arched, apex round-pointed, termen extremely obliquely rounded; whitish-ochreous, towards costa and on posterior half thinly strewn with scattered fuscous and dark fuscous scales; some blackish suffusion towards base of costa; blackish dots on dorsum at base, near base, and before tornus; stigmata blackish, plical obliquely before first discal, second discal rather large, round; some undefined elongate dark fuscous dots round posterior part of costa and termen; cilia whitish-ochreous, with faint fuscous median shade. Hindwings grey-whitish; cilia whitish-ochreous.

Woodbush Village (Swierstra); in December, two specimens. Type in Coll. Meyrick.

Tinea tephrinitis, n. sp.

♂. 12 mm., ♀. 16 mm. Head, palpi, and thorax dark purplish-fuscous. Antennae and abdomen grey. Forewings elongate, narrow, costa moderately arched, apex round-pointed, termen extremely obliquely rounded; in ♂ greyish-ochreous strigulated with dark purplish-fuscous, in ♀ purplish-grey irrorated with blackish; a suffused blackish spot in disc at $\frac{2}{3}$; margins of posterior half of wing spotted with blackish, in ♀ indistinctly; cilia in ♂ greyish-ochreous, in ♀ grey. Hindwings grey, with brassy reflections; cilia pale grey.

Woodbush Village (Swierstra); in December, two specimens. Type in Coll. Meyrick; co-type in Transvaal Museum.

Tinea encausta, n. sp.

♀. 12 mm. Head fulvous, face brown. Palpi dark fuscous. Antennae grey-whitish spotted with dark fuscous. Thorax light purplish-grey, anteriorly suffused with grey-whitish. Abdomen dark grey, anal segment ochreous-yellowish. Posterior tibiae with dense long hairs beneath on posterior half. Forewings elongate, rather narrow, costa moderately arched, apex pointed, termen very obliquely rounded; purplish irrorated with blackish; cilia fuscous tinged with ochreous, sprinkled with dark fuscous. Hindwings with 5 and 6 stalked; grey, with bluish reflections; cilia fuscous.

Haenertsburg (Swierstra); in December, one specimen. Type in Transvaal Museum.

Tinea oenopis Meyr.

Woodbush Village, in December (Swierstra).

Tinea homestia Meyr.

Haenertsburg, in December (Swierstra).

Tinea tanystis Meyr.

Woodbush Village and Haenertsburg, in December (Swierstra).

Tinea adamasta Meyr.

Woodbush Village, in December (Swierstra).

Tinea othello Meyr.

Shilouvane, in November (Junod).

Melasina stelitis Meyr.

♀. 27 mm. Head and thorax grey. Forewings more elongate than in ♂; grey, strigulated throughout with blackish irroration; three small obscure darker spots on costa posteriorly; cilia grey. Hindwings and cilia grey.

Woodbush Village, in December (Swierstra). This sex has not been previously described; the neuration of forewings is as in ♂.

Melasina effervescens, n. sp.

♂. 25 mm. Head whitish-ochreous, slightly tinged with brownish. Palpi moderately long, densely scaled, whitish-ochreous sprinkled with fuscous. Antennal pectinations 5. Thorax whitish mixed with brownish and dark fuscous. Abdomen fuscous, anal tuft pale ochreous. Forewings elongate, moderate, costa moderately arched, apex rounded-obtuse, termen obliquely rounded; all veins separate; whitish-brownish, irregularly sprinkled with brown; spaces between veins, except in cell, irregularly marked transversely with white and irrorated with dark fuscous between these, especially forming an oblong dark spot beneath middle; a small white discal spot on transverse vein, edged posteriorly with dark fuscous suffusion; costa spotted with dark fuscous suffusion: cilia whitish-ochreous, somewhat sprinkled with dark fuscous, with traces of brownish bars. Hindwings pale fuscous; cilia pale whitish-ochreous, with some brownish points.

Waterberg (Jutrzencka); one specimen. Type in Coll. Meyrick.

Melasina susurrans, n. sp.

♂. 24 mm., ♀. 26 mm. Head light ochreous. Palpi moderately long, densely scaled, pale ochreous, irrorated with dark fuscous except towards apex. Antennal pectinations in ♂ 5. Thorax whitish tinged with brownish, anterior and posterior margins suffused with blackish-fuscous irroration. Abdomen grey-whitish. Forewings sub-oblong, in ♂ rather broad, in ♀ more elongate, costa moderately arched, apex obtuse, termen in ♂ almost straight, in ♀ slightly rounded, oblique; all veins separate, 7 to apex; white, transversely striated throughout with brownish-ochreous and more or less irrorated with dark fuscous and blackish; the coalescence of these striae indicates a small basal patch, a narrow fascia from $\frac{1}{3}$ of costa to before middle of dorsum, with posterior edge angulated below middle, a narrow fascia from $\frac{2}{3}$ of costa to dorsum before tornus, and a slender more or less marked inwards-sinuate fascia from costa before apex to tornus; cilia ochreous-whitish, with pale brownish-tinged bars sprinkled with dark fuscous. Hindwings pale fuscous; cilia pale whitish-ochreous, towards base sprinkled with fuscous.

Woodbush Village (Swierstra); in December, two specimens. Type, ♂, in Coll. Meyrick; co type, ♀, in Transvaal Museum. Closely allied to aedifica, but differs in the regular striation of forewings, thereby appearing much less white, and in the ♂ the forewings are obviously broader.

Melasina expers, n. sp.

♂. 23 mm. Head fuscous mixed with whitish. Palpi moderate, with appressed scales, fuscous, apex of joints whitish. Antennal pectinations 3. Thorax fuscous irrorated with whitish and dark fuscous. Abdomen fuscous, anal tuft ochreous. Forewings elongate, costa moderately arched, apex rounded-obtuse, termen obliquely rounded; all veins separate; fuscous irregularly irrorated with whitish, and strigulated with dark fuscous irroration; an elongate mark of darker suffusion beneath middle of disc, terminated at each end with whitish, but no other defined markings; cilia fuscous, with whitish bars. Hindwings fuscous; cilia fuscous-whitish, with two fuscous shades.

Waterberg (Jutrzencka); one specimen. Type in Transvaal Museum.

Melasina liochra Meyr.

Haenertsburg, in December (Swierstra).

Atabyria bucephala Snell.

Pinetown, Natal, in December (Leigh); a large ♀ (20 mm.). This distinct species, described from Eastern Siberia and recorded by me also from Borneo, has not previously been noticed in South Africa; its distribution is singular, and suggests artificial means.

Amydria verecunda, n. sp.

♂. 16–18 mm. Head whitish-ochreous, face fuscous. Palpi dark fuscous somewhat sprinkled with whitish, second joint shortly rough-scaled beneath, with numerous lateral bristles. Antennae dark grey. Thorax fuscous. Abdomen light fuscous, segmental margins mixed with whitish. Forewings elongate, moderate, costa moderately arched, apex obtuse termen obliquely rounded; pale greyish-ochreous suffused with fuscous, with a few scattered dark fuscous scales; some ochreous-whitish suffusion along sub-median fold; stigmata dark fuscous, discal minute, approximated, plical larger, midway between discal; cilia pale greyish-ochreous sprinkled with dark fuscous. Hindwings fuscous; cilia as in forewings.

Woodbush Village and Haenertsburg (Swierstra); in December, two specimens. Type in Coll. Meyrick. Allied to trophias, which it resembles in form of wing.

Amydria trophias Meyr.

Woodbush Village, in December (Swierstra).

Scardia paracosma Meyr.

Woodbush Village, in December (Swierstra).

ADELIDAE.

Adela electella Walk.

Haenertsburg, in December (Swierstra); one ♀. This sex is the only one yet known; any collector who meets with the species should endeavour to discover the ♂, since it is still dubious whether it is not the other sex of *natalensis* Stt., a larger and differently marked insect, which is only known in the ♂ sex, and occurs in similar localities.

BUPRESTIDES DU MUSÉE DE PRÉTORIA (TRANSVAAL).

Par Ch. Kerremans.

M. J. W. B. Gunning, Directeur du " Transvaal Museum and Zoological Gardens " à Prétoria, a bien voulu me communiquer à l'examen les Buprestides de son Musée. J'ai trouvé dans cet envoi un lot très important comprenant 120 espèces parmi lesquelles 25 sont nouvelles. J'ai réservé, en vue de l'étude des Sphenoptera en ce moment en cours d'élaboration pour ma Monographie, 6 espèces de ce genre, que je crois nouvelles, et dont la description paraîtra dans cet ouvrage ; en outre four Agrilus, probablement nouveaux, ne sont pas mentionnés dans la présente liste et je me réserve de les décrire lorsque j'aurai pu me convaincre de leur nouveauté. C'est la raison pour laquelle la présent opuscule ne mentionne que 110 espéces, dont 15 nouvelles.

La faune du Transvaal, au point de vue des Buprestes, participe à la fois de celle de Natal et de celle de la région du Cap de Bonne Espérance, mais beaucoup plus de la première que de la seconde. Elle est caracterisée par le *Sternocera orissa* Bug. et ses nombreuses variétés, par de nombreux Acmaeodera, Steraspis, Psiloptera, et Sphenoptera, pour la plupart spéciaux à cette intéressante région sud-africaine.

Il n'est pas douteux que cette collection ne constitue qu'une faible partie de la totalité des Buprestides de cette région, mais tel qu'il se comporte, il forme un ensemble très intéressant et sufisamment complet pour pouvoir se rendre compte de la répartition des genres dans une région encore peu connue et que le zèle de M. Gunning ne tardera pas a mieux nous faire connaître.

Je remercie M. le Directeur du Transvaal Muséum de l'occasion qu'il m'a donnée d'étendre mes connaissances sur la faune sud-africaine.

1. *Sternocera monacha* Kl. ; var. *reimeri* Kolbe ; *Ent. Nachr.*, t. 23 (1897), p. 350. Ngade, E. Africa, November, 1904 (P. A. Krantz).*

2. *Sternocera orissa* Bug. ; *Bull. Fr.* (1837), p. 76. All over Transvaal except High Veld.

2*a*. *Sternocera orissa*, var. *liturata* White ; *Ann. Mag.* N. H., t. 12 (1843), p. 266. All over Transvaal. except High Veld.

2*b*. *Sternocera orissa*, var. *lanifica* Erichs. ; *Wieg. Arch.*, t. 1 (1843), p. 223. Eastern Transvaal.

2*c*. *Sternocera orissa*, var. *bertolinii* Thoms. ; *Typ. Bupr.* (1878), p. 7. Eastern Transvaal.

3. *Julodis hirsuta* Herbst ; *Arch.*, t. 7 (1786), p. 173, pl. 46, f. 4. Cape Colony.

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* Note.—The localities have been added by Mr. Swierstra, the Entomologist of the Transvaal Museum.—Ed., *Ann. Trl. Mus.*

4. *Neojulodis vittipennis* Fahreus; *Ins. Caffr.*, t. 1 (1851), p. 299. All over Transvaal.
5. *Amblysterna natalenis* Fahreus; *l.c.*, p. 299. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, December, 1898 (R. v. Jutrzencka).
5*a*. *Amblysterna natalenis* Fahreus, var. *splendens* Kl.; *Mon. Berl. A.K.* (1855), p. 644. Rustenburg District, 1903 (P. A. Krantz).
6. *Paracastalia ornatipennis* Kerrem.; *Monogr. Bupr.*, t. 1 (1906), p. 412, pl. 7, f. 5. East Africa.
7. *Pseudocastalia peringueyi* Kerrem.; *l.c.*, p. 452, pl. 8, f. 10. Lydenburg District, 1896 (P. A. Krantz).
8. *Neopolycesta 14-maculata* Fahreus; *Ins. Caffr.*, t. 1 (1851), p. 314. Kerrem.; *Monogr. Bupr.*, t. 1 (1906), p. 461, pl. 9, f. 2. Pienaars River, January, 1898 (R. v. Jutrzencka).
9. *Neopolycesta tigrina* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1838), p. 6, pl. 1, f. 7 (*Polycesta*). Pretoria, 24th May, 1904 (C. J. Swierstra).
10. *Acmaeodera virgo* Boh.; *Oef. Vet. Ak. Fahr.* (1860), p. 2. Waterkloof, Pretoria District, November, 1903 (F. O. Noome); Lydenburg District, 1896 (P. A. Krantz).
11. *Acmaeodera lugubrina* Boh.; *l.c.*, p. 20. Pietpotgietersrust, October, 1908 (C. J. Swierstra).
12. *Acmaeodera planiuscula* Cast. et Gory. Waterberg District, December, 1898 (R. v. Jutrzencka).
13. *Acmaeodera grata* Fahr., var. *wahbergi* Fahr. Waterberg District, December, 1898 (R. v. Jutrzencka); Lydenburg District, 1896 (P. A. Krantz).
14. *Acmaeodera ruficaudis* De Geer; *Mém. Ins.*, t. 7 (1778), p. 632, pl. 47, f. 11. All over the bushy parts of the Transvaal.
15. *Acmaeodera exasperans* Kerrem.; *Monogr. Bupr.*, t. 2 (1908), p. 457, pl. 15, f. 9. Waterberg District, 1899 (R. v. Jutrzencka).
16. *Acmaeodera miniastospilota* Kerrem; *l.c.*, p. 470. Lydenburg District, 1896 (P. A. Krantz).
17. *Acmaeodera subprasina* Mars.; *Ann. Fr.* (1867), p. 54. Waterberg District, 1899 (R. v. Jutrzencka).
18. *Acmaeodera posticalis* Cast. et Gory; *Monogr. Bupr.*, t. 1 (1835), p. 28, pl. 8, f. 47. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1899 (R. v. Jutrzencka); Pienaars River, November, 1900 (R. v. Jutrzencka).
19. *Acmaeodera albovillosa* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 301. All over the warmer parts of the Transvaal.
20. *Acmaeodera viridiaenea* De Geer; *Mem. Ins.*, t. 7 (1778), p. 631, pl. 47, f. 8. All over the warmer parts of the Transvaal.
21. *Acmaeodera fraterna* Boh.; *Oef. Vet. Ak. Forh.* (1860), p. 19. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1899 (R. v. Jutrzencka).
22. *Acmaeodera grandis* Guérin; *Voy. Lefeb. Zool.* (1847), p. 274, pl. 2, f. 1. Lydenburg District, 1896 (P. A. Krantz).

23. *Acmaeodera foudrasi* Sol.; *Ann. Fr.*, t. 2 (1833), p. 276. Kerrem. *Monogr. Bupr.*, t. 2 (1908), p. 516, pl. 16, fig. 8 et 9. Waterberg District, 1899 (R. v. Jutrzencka).
24. *Chrysochroa lepida* Gory; *Ann Fr.* (1883), p. 383, pl. 12B, f. 3. Lydenburg District, 1896 (P. A. Krantz).
25. *Steraspis amplipennis* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 312. Pretoria, January, 1898 (C. J. Swierstra).
26. *Steraspis jackal* Thoms.; *Rev. Mag. Zool.* (1879), p. 297. Pienaars River, 1899 (R. v. Jutrzenka).
26*a*. *Steraspis jackal*, var. *hypocrita* Thoms.; *l.c.*, p. 297. Lydenburg District, 1896 (P. A. Krantz).
26*b*. *Steraspis staudingeri* Kerr. Lydenburg District, 1896 (P. A. Krantz).
27. *Steraspis reptilis* Thoms.; *l.c.*, p. 298. Shilouvane, Zoutpansberg District (Rev. H. Junod.)
28. *Steraspis ambigua* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 312. Pienaars River, 1898 (R. v. Jutrzencka).
28*a*. *Steraspis ambigua*, var. *delegorguei* Thoms.; *Typ. Bupr.*, p. 11. Pienaars River, 1898 (R. v. Jutrzencka); Shilouvane, Zoutpansberg District (R. H. Junod).
28*b*. *Steraspis ambigua*, var. *aeruginosa* Kl.; *Mon. Ak. Berl.* (1855), p. 645. Lydenburg District, 1896 (P. A. Krantz); Shilouvane, Zoutpansberg District (Rev. H. Junod); Barberton, April, 1905 (Miss De Beer).
29. *Steraspis psilopteroides* Kerrem.; *Ann. Belg.*, t. 43 (1899), p. 256. Barberton, December, 1902 (Gould); Barberton (Gould).
30. *Agelia peteli* Gory; *Monogr. supp.*, t. 4 (1840), p. 51, pl. 10, f. 51. Lydenburg District (P. A. Krantz); Waterberg District and Pienaars River (R. v. Jutrzencka); Barberton (Miss De Beer).
31. *Evides gambiensis* Cast. et Gory; *Monogr. Bupr.*, t. 1 (1835), p. 12, pl. 3, f. 15 (*Chrysodema*). Barberton, February, 1903 (Gould).
32. *Evides pubiventris* Gory, var. *cupriventris* Thoms.; *Typ. Bupr.* (1878), p. 24. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1899 (R. v. Jutrzencka).
33. *Tridotaenia limbata* Kl.; *Mon. Berl. Ak.* (1855), p. 645. E. Africa.
34. *Chalcogenia aliena* Kl.; *Mon. Berl. Ak.* (1855), p. 646. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1899 (R. v. Jutrzencka); Shilouvane, Zoutpansberg District (Rev. H. A. Junod).
35. *Psiloptera amicta* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 322. Barberton, April, 1907 (Miss Williams).
36. *Psiloptera vana* Fahr.; *l.c.* p. 323. Kerrem.; *Monogr. Bupr.*, t. 5 (1910), p. 220, pl. 29, f. 2. Krabbefontein, Zoutpansberg District, December, 1902 (Dr. H. G. Breyer); Lydenburg District, 1896 (P. A. Krantz); Barberton, February, 1903 (Gould).
37. *Psiloptera gregaria* Fahr.; *l.c.*, p. 317. Lydenburg District, 1896 (P. A. Krantz).
38. *Psiloptera viridimarginata* Fahr; *l.c.*, p. 320. Waterberg District and Pienaars River, 1898 (R. v. Jutrzencka); Rustenburg District, 1903 (P. A. Krantz).

39. *Psiloptera suspecta* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 319. Kerrem.; *Monogr. Bupr.*, t. 5 (1910), p. 222, pl. 29, f. 4. Lydenburg District, 1896 (P. A. Krantz).
40. *Psiloptera victor* Kerrem.; *Ann. Belg.*, t. 44 (1900), p. 290. All over the bushy part of the Transvaal.
41. *Psiloptera peringueyi* Kerrem.; *Monogr. Bupr.*, t. 5 (1910), p. 228. Lydenburg District, 1896 (P. A. Krantz).
42. *Psiloptera 4-areolata* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 318. All over the warm parts of the Transvaal.
43. *Psiloptera oculicollis* Cast. et Gory; *Monogr. Bupr.*, t. 1 (1836), p. 44, pl. 11, f. 55. Lydenburg District, 1896 (P. A. Krantz).
44. *Psiloptera foveicollis* Gory; *Monogr. supp.*, t. 4 (1840), p. 95, pl. 17, f. 93. Transvaal general.
45. *Psiloptera amaurotica* Kl.; *Mon. Berl. Ak.* (1855) p. 645. Lydenburg District, 1896 (P. A. Krantz).

45*a*. *Psiloptera amaurotica*, var. *proxima* Kl.; *l.c.*, p. 645. East Africa.

46. *Psiloptera opthalmica* Kl.; *l.c.*, p. 646. Shilouvane, Zoutpansberg District (Rev. H. Junod).
47. *Psiloptera vigilans* Har.; *Mon. Berl. Ak. Wiss.* (1878), p. 215. Waterberg District, 1899 (R. v. Jutrzencka).
48. *Psiloptera stuhlmanni* Kolbe; *Stuhlm. Ost. Afr.*, pt. 4 (1897), p. 202, pl. 2, f. 20. Lydenburg District, 1896 (P. A. Krantz); Shilouvane, Zoutpansberg District (Rev. H. Junod).
49. *Psiloptera gunningi*, nov. sp. Waterberg District, 1898 (R. v. Jutrzencka).
50. *Psiloptera tristis* Linne; *Syst. Nat. Ed.* (1758), t. 1, p. 490. Lydenburg District, 1896 (P. A. Krantz).
51. *Psiloptera albomarginata* Herbst; *Col.*, t. 9 (1801), p. 132, pl. 44, f. 2. Lydenburg District, 1896 (P. A. Krantz); Shilouvane, Zoutpansberg District (Rev. H. Junod).
52. *Sphenoptera campicola* Boh.; *Oefers. Vet. Ak. Forh.* (1860), p. 21, Waterberg District and Pienaars River, 1898 (R. v Jutrzencka).
53. *Sphenoptera rugosicollis* Kerrem.; *Ann. Belg.*, t. 42 (1898), p. 295. Lourenco Marques.
54. *Sphenoptera disjuncta* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 334. Waterberg District, 1898 (R. v. Jutrzencka); Rooiplaat, Pretoria District, January, 1904 (C. J. Swierstra).
55. *Sphenoptera delegorguei* Thoms.; *Typ. Bupr.* (1878), p. 68. Lydenburg District, 1896 (P. A. Krantz); Waterberg District and Pienaars River, 1898 (R. v. Jutrzencka).
56. *Sphenoptera capensis* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1839), p. 31, pl. 7, f. 47. Barberton, February, 1903 (Gould).
57. *Sphenoptera gentilis* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 336. Platriver, Waterberg District, 18th April, 1905 (C. J. Swierstra).
58. *Sphenoptera fahrei* Kerrem., nom. nov. pro *corrugata* Fahr. (nec *Klug*); *Ins. Caffr.*, t. 1 (1851), p. 333. Platriver, Waterberg District, 18th April, 1905 (C. J. Swierstra).
59. *Sphenoptera fallax* Fahrs.; *l.c.*, p. 335. Pienaars River, Waterberg District, 1898 (R. v. Jutrzencka); Platriver, Waterberg District, 17th April, 1905 (C. J. Swierstra).

60. *Sphenoptera mucronata* Boh.; *l.c.*, p. 332. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1899 (R. v. Jutrzencka).
61. *Sphenoptera tantilla* Fahr.; *l.c.*, p. 338. Waterberg District and Pienaars River, 1898 (R. v. Jutrzencka).
62. *Sphenoptera neglecta* Kl.; *Erm. Ath.* (1835), p. 30. Thabina, Zoutpansberg District, 10th November, 1905 (C. J. Swierstra).
63. *Sphenoptera capicola* Thoms.; *Typ. Bupr.* (1878), p. 68. East Africa.
64. *Sphenoptera pretoriensis*, nov. sp. Waterkloof, Pretoria District, November, 1903 (F. O. Noome); Lydenburg District, 1896 (P. A. Krantz); Barberton, February, 1906 (Miss De Beer).
65. *Sphenoptera gunningi*, nov. sp. Lydenburg District, 1896 (P. A. Krantz); Pienaars River, 1898 (R. v. Jutrzencka).
66. *Sphenoptera leighi*, nov. sp. Pinetown, Natal, 14th December, 1908 (G. F. Leigh).
67. *Chalcogenia sulcipennis* Gory; *Monogr. supp.*, t. 4. (1840), p. 299, pl. 50, f. 294. Krabbefontein, Zoutpansberg District, December, 1902 (Dr. H. G. Breyer).
68. *Chalcogenia contempta* Mann.; *Bull. Mos.* (1837), p. 84. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1898 (R. v. Jutrzencka).
69. *Melanophila unicolor* Gory; *Monogr. supp.*, t. 4 (1840), p. 73, pl. 13, f. 71. Waterberg District and Pienaars River, 1898 (R. v. Jutrzencka).
70. *Anthaxia aenea* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1839), p. 7, pl. 2, f. 9. Pienaars River, 1900 (R. v. Jutrzencka); Platriver, Waterberg District, 17th April, 1905 (C. J. Swierstra).
71. *Anthaxia melancholica* Gory; *Monogr. supp.*, t. 4 (1840), p. 283, pl. 47, f. 275. Lydenburg District, 1896 (P. A. Krantz).
72. *Anthaxia thunbergi* Cast. et Gory, *Monogr. Bupr.*, t. 2 (1839), p. 6, pl. 2, f. 7. Waterberg District, 1898 (R. v. Jutrzencka).
73. *Anthaxia triangularis* Gory; *Monogr. supp.*, t. 4 (1840), p. 294, pl. 49, f. 288. Lydenburg District, 1896 (P. A. Krantz).
74. *Anthaxia splendida* Chevrol., var. *viridis* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1839), p. 27, pl. 6, f. 36. Waterberg District and Pienaars River, 1898 (R. v. Jutrzencka).
75. *Anthaxia gunningi*, nov. spec. Waterberg District, 1899 (R. v. Jutrzencka).
76. *Anthaxia dispar* Kerrem.; *Ann. Belg.*, t. 42 (1898), p. 300. Woodbush Village, 17th December, 1907 (C. J. Swierstra).
77. *Anthaxia ventralis*, nov. spec. Waterberg District, 1898 (R. v. Jutrzencka).
78. *Octenodes krantzi*, nov. spec. Ngade, East Africa, January, 1904 (P. A. Krantz).
79. *Chrysobothris dorsata* Fab.; *Mant. Ins.*, t. 1 (1787), p. 179. Lydenburg District, 1896 (P. A. Krantz); Waterberg District, 1898 (R. v. Jutrzencka).
80. *Chrysobothris regradata* Wallengr.; *Ent. Tidsk.*, t. 2 (1881), p. 16, Lydenburg District, 1896 (P. A. Krantz).

81. *Megactenodes reticulata* Kl.; *Mon. Berl. Ak.* (1855), p. 646. Lydenburg District, 1896 (P. A. Krantz).
82. *Megactenodes westermanni* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1837), p. 5, pl. 1, f. 3 (*Belionota*). Natal.
83. *Belionota canaliculata* Fab.; *Mant.*, t. 1 (1787), p. 181. Pienaars River, 1898 (R. v. Jutrzencka).
84. *Meliboeus ornatus*, nov. spec. Waterberg District, 1898 (R. v. Jutrzencka).
85. *Meliboeus pygmaeus* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1837), p. 70, pl. 15, f. 94 (*Agrilus*). Waterberg District, 1898 (R. v. Jutrzencka).
86. *Meliboeus crassus* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1839), p. 31, pl. 8, f. 39 (*Agrilus*). Shilouvane, Zoutpansberg District (Rev. H. Junod).
87. *Meliboeus bisetus* Thunb.; *Act. Nov. Ups.*, t. 9 (1827), p. 50. Pretoria, 6th January, 1902 (C. J. Swierstra); Waterberg District, 1898 (R. v. Jutrzencka).
88. *Meliboeus purpuratus* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 352. Waterberg District, 1898 (R. v. Jutrzencka).
89. *Meliboeus nodosus* Thunb.; *Act. Nov. Ups.* (1827), p. 50. Shilouvane, Zoutpansberg District (Rev. H. Junod).
90. *Pseudagrilus inornatus* Har.; *Monogr. Berl. Ak.* (1878), p. 218. Waterberg District and Pienaars River, 1898 (R. v. Jutrzencka); Pietersburg, 30th November, 1905 (C. J. Swierstra).
91. *Pseudagrilus beryllinus* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 360. Koedoes and Great Letaba Rivers, December, 1902 (Dr. H. G. Breyer).
92. *Sambus albopunctatus* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 347. Durban.
93. *Olyssoderus magnus*, nov. spec. Waterkloof, Pretoria District, November, 1903 (F. O. Noome).
94. *Asymades transvaalensis* Kerrem.; *Ann. Belg.*, t. 37 (1893), p. 119. Waterberg District, 1898 (R. v. Jutrzencka).
95. *Amorphosoma gunningi*, nov. spec. Waterberg District, 1898 (R. v. Jutrzencka).
96. *Phlocteis exasperatus* Schonh.; *Syn. Ins.*, App. (1817), p. 124. Waterberg District, 1898 (R. v. Jutrzencka); Lydenburg District, 1896 (P. A. Krantz).
97. *Phlocteis pygmaeus*, nov. spec. Thabina, Zoutpansberg District, 12th November, 1905 (C. J. Swierstra).
98. *Anadora mechovi* Guedenf.; *Berl. Ent. Zeit.* (1886), p. 22. Waterberg District, 1898 (R. v. Jutrzencka).
99. *Agrilus grandis* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1837), p. 5, pl. 1, f. 3. Shilouvane, Zoutpansberg District (Rev. H. Junod); Krabbefontein, Zoutpansberg District, December, 1902 (Dr. H. G. Breyer).
100. *Agrilus sexguttatus* Thumb.; *Nov. Ins. Spec. Biss.* (1789), pl. 1, f. 3. All over Transvaal.
101. *Agrilus cupriventis* Cast. et Gory; *Monogr. Bupr.*, t. 2 (1837), p. 23, pl. 5, f. 28. Thabina, Zoutpansberg District, 12th November, 1905 (C. J. Swierstra).

102. *Agrilus variegatus* Cast. et Gory; *l.c.*, p. 33, pl. 8, f. 43. Lydenburg District, 1896 (P. A. Krantz).
103. *Agrilus gunningi*, nov. spec. Lydenburg District, 1896 (P. A. Krantz).
104. *Agrilus breyeri*, nov. spec. Great Letaba, Zoutpansberg District, December, 1902 (Dr. H. G. Breyer).
105. *Agrilus krantzi*, nov. spec. Waterberg District, 1898 (R. v. Jutrzencka).
106. *Agrilus cuspidatus* Fahrs.; *Ins. Caffr.*, t. 1 (1851), p. 324. Shilouvane, Zoutpansberg District, November, 1899 (Rev. H. Junod).
107. *Kamosia meridionalis* Kerrem.; *Ann. Soc. Ent. Belg.*, t. 42 (1898), p. 315. Lydenburg District, 1896 (P. A. Krantz).
108. *Cylindromorphus transvaalensis*, nov. spec. Platriver, Waterberg District, 18th April, 1905 (C. J. Swierstra).
109. *Aphanisticus insculptus* Fahr.; *Ins. Caffr.*, t. 1 (1851), p. 372. Scheerpoort, Pretoria District, 22nd February, 1906 (C. J. Swierstra).
110. *Trachys evanescens* Fahr.; *l.c.*, p. 369. Pretoria, 29th March, 1905 (C. J. Swierstra).

DIAGNOSES DES ESPÈCES NOUVELLES.

Psiloptera (*Damarsila*) *gunningi*.—Long. 26–28 mm.; larg. 10–11 mm. Voison des *P. meyerei* Kerrem. et *vigilans* Har., différent de ceux ci par la structure élytrale, les interstries n'étant pas interrompus par des reliefs lissés, mais entiers et sub-costiformes. Noir en dessus avec le Billon marginal des élytres cuivreux rosé, couvert, comme en dessous, d'une pulvérulence blanche dans les dépressions et les points; les reliefs du pronotum épais; une carène lisse médiane et, de chaque côté, un grand relief oblique dans l'angle antérieur. Dessous noir avec les tarses et la marge inférieure des élytres vert clair; la pulvérulence plus jaunâtre que celle du dessus. (Waterberg.)

Sphenoptera pretoriensis.—Long. 13–18 mm.; larg. 4–6 5 mm. Faciès se rapprochant de *S. campicola* Boh., mais sans sillon sur le pronotum. Noir en dessus à reflots cuivreux violacé sur le pronotum et à la case des élytres; dessous bronzé clair et brillant avec les tarses verts et une plaque lissé bleu d'acier et déchiquetée sur les segments 1 à 4. Le 2 article des antennes plus court que 3; prosternum large, plan, à ponctuation fine et espace ♀, ou legèrement creusé ♂. Le mâle est plus violacé en dessous. (Waterberg.)

Sphenoptera gunningi.—Long. 12 5 mm.; larg. 3 5 mm. Différent du précédent par la tête plus large, le pronotum plus convexe, plus allongé et à côtés arqués, rétrécis en avant et en arrière, moins noir, d'un bronzé très obscur, antennes et tarses noirs, le dessous, comme chez le précédent, couvert d'une abondante pulvérulence blanche; 2 article des antennes plus court que 3; prosternum plan, à strie marginale entière. (Waterberg.)

Sphenoptera leighi.—Long. 8 mm.; larg. 2 mm. Etroit, sub parallèle, bronzé clair en dessus, plus noir en dessous avec les grattes bronzées. Tête large, yeux saillants en dehors, pronotrum à peine atténné en avant, à côtés subparallèles, sans sillon médian et rétréci en arrière; élytres médiocrement dentés au sommet. Prosternum à strie marginale entière, très fine. (Pinetown.)

Anthaxia gunningi.—Long. 3 5 mm.; larg. 1·3 mm. Petit, parallèle, peu convexe; tête verte; pronotum vert avec deux grandes taches discales violacé pourpré obscur, ne laissant de vert qu'une étroite bande antérieure, les côtés et une fine ligne médiane. Élytres verts avec le tiers postérieur et, de chaque côté une grande tache allongée violacé pourpré obscur. Dessous noir brillant, un peu verdâtre; pattes vert obscur. (Waterberg.)

Anthaxia ventralis.—Long. 4–5 mm.; larg. 1·5–2·5 mm. Ecourté, subrectangulaire, bronzé ou noir violacé avec les côtés du pronotum pourprés. Dessous noir, avec les côtés antérieurs des segments abdominaux pourprés. Faciès des Tetragonoschema par sa forme écourtée. Le ♂, beaucoup moins robuste, a le front cuivreux pourpré obscur; la ♀ est obèse, plus grande, avec le front de la couleur du pronotum. (Waterberg.)

Actenodes krantzi.—Long. 15 mm.; larg. 5 mm. Faciès et dessin élytral des espèces américaines de ce genre, tout à fait différent de ce que l'on connaît de l'Afrique. Tête bronzé clair, avec une impression ovalaire, allongée, sur le front; pronotum transversalement impressionné de part et d'autre, vert brillant obscur avec la marge antérieure, les angles postérieurs et une tache triangulaire médiane, touchant le sommet et atteignant près que la base d'un pourpré violacé; élytres à peine dentelés au tiers postérieur, d'un noir violacé avec la suture vert clair, le vert bordé extérieurement de pourpre; la marge latérale violette, et une bande prémarginale cuivreuse, droite, allant de l'épaule au sommet, la partie comprise entre cette bande et la marge latérale vert doré. Dessous noir verdâtre brillant. (Ngade, Afr. orient.)

Meliboeus ornatus.—Long. 13 mm.; larg. 4 mm. Robuste, très convexe, noir bleuâtre en dessus, noir en dessous; tête avec une impression frontale couverte d'une pulvérulence blanc jaunâtre; pronotum convexe avec de chaque côté une large tache deprimée et arrondie, couleur de rouille dans l'angle postérieur et une tache, plus petite, triangulaire et plus jaune dans l'angle antérieur. Dessous avec des côtés du sternum et des hanches et ceux de chacun des quatre premiers segments abdominaux tachés de blanc pur. (Waterberg.)

Alyssoderus magnus.—Long. 18 mm.; larg. 5 5 mm. Allongé, brun terne en dessus, couvert d'une épaisse pulvérulence terreuse; dessous bronzé brun. Tête creusée avec deux carènes pubescentes le long des yeux. Pronotum trés inégal, à grosse carène marginale arquée, le disque avec six reliefs formés par des houppettes de poils; les dytres avec quatre côtes sa sature et la merge latérale saillantes, les côtes 2 et 4 plus courtes que les autres. Dessous couvert d'une pubescence soyeuse, gris jaunâtre, retenant une pulvérulence terreuse; pattes bronzées. L'extrémité des élytres largement et séparément arrondie. (Waterkloof.)

Amorphosoma gunningi.—Long. 8·5 mm.; larg. 2 mm. Tête et pronotum bronzé cuivreux; élytres laissant à découvert la portion dorsale des trois premiers segments abdominaux, d'un bronzé très obscur et ornés d'un dessin couvert d'une pulvérulence d'un gris argenté. Dessous bronzé, entièrement couvert de la même pulvérulence sauf les pattes, les côtés inférieurs du pronotum et les deux dérniers segments abdominaux.

Tête sillonnée longitudinalement et transversalement entre quatre tubercules saillants ; pronotum très inégal, couvert de huit tubercules saillants ; élytres sans côtes ni tubercules, légèrement creusés le long de la suture, séparément arrondis et finement dentelés au sommet. (Waterberg.)

Phlocteis pygmaeus.—Long, 8 mm. ; larg. 2 mm. Allongé, subparallèle, plan en dessus, tête et pronotum bronzé cuivreux brillant obscur ; élytres noir mat avec, de chaque côté, deux petites taches et une large bande sinueuse pubescentes de roux terne, les taches situées sur le disque antérieur, plus près de la suture que du bord extérieur, l'une près de la base, l'autre au milieu, la bande préapicale, prolongée en avant le long de la suture ; dessous noir bleuâtre mat. Tête quadri tuberculée ; pronotum inégal, bossué, largement arrondi sur les côtés ; élytres séparément arrondis et très finement dentelés au sommet. Dessous mat avec les bords des segments abdominaux brillants. (Thabina.)

Agrilus gunningi.—Long. 7·5 mm. ; larg. 1·3 mm. Allongé, atténué en arrière, entierement noir, mat et couvert d'une courte pubescence grise ; antennes cuivreux pourpré. Tête plane, finement granuleuse ; pronotum inégal, déprimé en avant et sur les côtés, ceux ci arrondis en avant et sinueux en arrière ; carène postérieure saillante et arquée ; élytres finement granuleuses, convexes, déprimées à la base, conjointement arrondis et finement dentelés au sommet. Dessous un peu plus brillant que le dessus ; mentonnière grande et entière. (Lydenburg.)

Agrilus breyeri.—Long. 8 mm. ; larg. 1·5 mm. Allongé, plan en dessus, atténué en arrière, tête et pronotum bronzé cuivreux obscur, élytres noirs avec, de chaque côté, le long de la suture, une bande pubescente de roux terne. Dessous bronzé brillant, couvert d'une abondante pubescence blanche et courte. Tête plane, finement granuleuse, verdâtre clair, vertex sillonné ; pronotum inégal, déprimé en avant et sur les côtés, ceux ci un peu plus élargis en avant qu'en arrière et régulièrement mais faiblement arqué ; carène postérieure saillante et arquée ; élytres chagrinés, déprimés le long de la suture, impressionnés à la base et séparéarrondis, subacuminés au sommet. Dessous d'un bronzé rosé clair ; mentonnière très grande et largement arquée. (Great Letaba.)

Agrilus krantzi.—Long. 7 mm. ; larg. 1·5 mm. Allongé, élargi en avant et atténué en arrière, tête cuivreuse, pronotum et élytres noir mat, pubescents de gris ; dessous bronzé clair et couvert d'une abondante et courte pubescence blanche. Tête quadrituberculée ; pronotum largement arrondi sur les côtés en avant et obliquement atténué ensuite en ligne droite jusque la base, le disque largement impressionné en avant et sur les côtés, la carène latérale très saillante et arquée ; élytres assez convexes, finement granuleux, déprimés à la base, vaguement déprimés le long de la suture, séparément arrondis et finement dentelés au sommet. Mentonnière grande et largement arquée. (Waterberg.)

Cylindromorphus transvaalensis.—Long. 3·7 mm. ; larg. 0·7 mm. Allongé, cylindrique, noir verdâtre, couvert d'une pubescence blanche. Tête sillonné ; pronotum grand, arrondi sur les côtés, convexe sur le disque, sillonné le long de la base, couvert de petites rides simulant des écailles ; élytres parallèles, finement granuleux et séparément arrondis au sommet. Dessous moins rugueux que les élytres. (Platriver.)

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ANNALS MEDEDELINGEN

OF THE VAN HET

TRANSVAAL MUSEUM

JULY, 1911

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ANNALS MEDEDELINGEN
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NOTE ON THE RELATIONSHIP OF THE MAXILLA OF VIPERS TO THAT OF COLUBRIDAE..

By JOHN HEWITT, B.A. (Cantab.).

THE features of the maxillary bone and its dentition afford the only known method of distinguishing the Viperidae from the Colubridae, and of subdividing the latter family into the three series, Aglypha, Opisthoglypha, and Proteroglypha. In the British Museum Catalogue of Snakes, Mr. Boulenger expressed the opinion that the maxillary bone of the viper is to be derived from the opisthoglyphous type, a view which was accepted and repeated by Dr. Gadow in the "Cambridge Natural History", though the necessary evidence is not stated by either authority. It may be presumed that according to this view the opisthoglyph maxilla has given rise to the viperine type by an upward tilting of its anterior portion through an angle of ninety degrees, the poison fangs being situated at the fulcrum, this change of position being accompanied by the loss of all the solid teeth. As an alternative to the tilting hypothesis it is conceivable that the whole of the anterior portion of the maxilla has aborted, and subsequently the fang-bearing portion has expanded vertically upwards into a cylinder. After careful examination of a series of skulls it appears to me more probable that the Viperidae are not of opisthoglyphous ancestry, but are more closely related to the proteroglyphous stock, as was believed by the earlier morphologists. A typical viper such as the puff-adder (*Bitis arietans*) shows a very considerable degree of modification in its skull characters, if we suppose it to be derived from a colubrid type, but there are other vipers, such as the night-adder (*Causus rhombeatus*) and Atractaspis, which furnish connecting links between the two families. In those familiar types which have been so often figured, Bitis, Vipera, Crotalus, the maxilla is a short sub-cylindrical bar, vertically arranged, inferiorly bearing the large poison glands, but no solid teeth, and attached above by a definite movable joint to the anterior surface of the prefrontal bone ; in the Colubridae the prefrontal bone ordinarily forms a transverse partition stretching from the maxilla towards its fellow in the middorsal line and forming the anterior wall of the orbital cavity, but in *Bitis arietans* and *Crotalus horridus* the orbital portion is bent forwards and upwards away from the orbit forming a large and broad bony mass more or less parallel with the long axis of the skull. It should be mentioned, however, that even in the same genus the prefrontal character may show a fairly wide range of variation, and in *Bitis atropos*, for instance, the orbital portion of this bone, though much thickened, is directed, not horizontally forwards, but obliquely downwards. In *Causus rhombeatus* the special viperine features are ill-pronounced, for the prefrontal is precisely of the colubrid type and the maxilla is a three-sided bar obliquely arranged, its posterior side merely in apposition with the antero-inferior portion of the prefrontal without forming any such well-defined joint as occurs in Bitis. It is significant that in other respects the genus Causus is of a more generalized type than ordinary vipers, for the scutellation of the head is quite like that of the Colubridae, whereas in most vipers the head shields are more or less broken up into small scales. The genus Atractaspis, which as regards size of fangs and reduction of the palatal and mandibular teeth is very specialized, has a type of maxilla representing an early stage in the evolution of the Bitis type, for it is simply a short block of bone lying immediately below and movably jointed with the prefrontal, but as a whole showing no vertical elongation. The head scaling of this genus also is of the colubrid type. The evidence of this snake should, however, be received with caution, as probably it is a downgrade type, for the skull has the same degraded features as occurs in other genera of burrowing snakes (*cp.* Prosymna, also Silybura and Typhlops); moreover, such snakes (*cp.* Prosymna, also Macrelaps, which have fewer teeth than any other S. African opisthoglyph) are apt to show a greatly reduced dentition, accompanied by an unusual enlargement of one or two individual teeth, so that the very large fangs of Atractaspis may be explained in the same way, and, further, the well-developed maxillo-prefrontal joint considered in conjunction with the slender transverse bone which is hardly strong enough for the viperine function—observations on the jaw movements in life are a great desideratum—suggests that this snake is derived, not directly from the Colubridae proper, but from a more normal viper.

Amongst the Proteroglypha there are many genera (*cp.* Dendraspis) in which the poison fangs are indistinguishable from those of vipers ; in many cases (Naia, Sepedon) the maxillary bone terminates anteriorly immediately below the prefrontal, whilst posteriorly it is much shortened and may be entirely without solid teeth. Further, in addition to the shortening of the maxilla, there is generally an enlargement, especially in a vertical direction, of the fang-bearing portion, so that the bone is carried upwards along the anterior surface of the prefrontal. Such a case is that of the genus Naia, which in the general relation of the fang-bearing portion of the maxilla to the prefrontal bone shows a resemblance to Causus, but differs in that there still remains posterior to the fangs a short but almost edentulous portion of the original maxilla. *Sepedon haemachates* presents a further stage in that the maxilla has entirely dispensed with its solid teeth, though a short length of toothless bone still remains.

A complete series of intermediates between the type represented by Naia or Sepedon and that of Causus does not exist apparently, but this is no serious objection to the view here presented, for the gap is not a great one, and, moreover, a possible explanation is suggested in the special movement of the maxillary apparatus in vipers : as soon as the evolutionary process had reached the stage when it became possible and advantageous for the maxilla to be moved about the prefrontal through the transverse bone, the reduction of the hinder maxilla would proceed apace, as this function is best performed with the transverse bone directly attached to the fang-bearing portion.

On the other hand, the origin of vipers from an opisthoglyphous type would demand more profound changes. Firstly, the Opisthoglypha have simple grooved teeth, and tubular teeth are quite unknown in the group. Secondly, and this is more important, the fang-bearing portion of the maxilla is situated far behind the prefrontal bone, and whilst it is difficult to see how the evolution of the viperine character can have commenced when these two structures were not even in contact, there does not appear to be any tendency in the Opisthoglypha for a forward movement of the fang-bearing portion. Nor is the tendency to get rid of the solid teeth so pronounced as in the Proteroglypha, and in no case have they entirely disappeared. It will therefore be necessary for the advocates of this theory to show how the posteriorly situated fangs have been moved forward up to the prefrontal bone, and how subsequently the anterior portion of the maxilla has lost its teeth and has been tilted or otherwise changed into the upright maxilla of a viper. But in any case, the evidence of allied forms points to the conclusion that in vipers a vertically elongated maxilla is of secondary origin. The maxilla of Bitis has a short and slender backwardly directed process situated immediately above the attachment of the transverse bone ; this no doubt represents the original articulating surface with the prefrontal, a connection which became unnecessary as the maxilla gradually crept upwards and found a new articulating surface on the anterior side of the same bone, thereby giving a greater freedom of movement to the maxilla.

It is not possible for me to deal with the mutual relationships of these several groups from other points of view, but it may be mentioned that the various published accounts of snake venoms seem to show that there is more in common between the Proteroglypha and the vipers than between the Opisthoglypha and either of the former groups. And, again, the vipers and proteroglyphs agree together in the possession of hypapophyses throughout the vertebral column, whereas in the great majority of opisthoglyphs these processes are absent from the posterior body vertebrae, though in a few genera—but all with the primitive type of maxilla—these posterior hypapophyses are present.

The facts of distribution could probably be explained in terms of either theory : both Viperidae and Proteroglypha are comparatively recent in origin, as they are absent from Madagascar, and the vipers at anyrate were not able to make use of the Brazil–West Africa connection of the early tertiary period, whilst the absence of vipers from Australia may be best explained on the assumption that they are still more recent than Proteroglypha.

TRANSVAAL CRUSTACEA.

PART II.

Notice of a Freshwater Amphipod from South Africa.

By PAUL A. METHUEN.

Family GAMMARIDEA Leach.
Genus *Eucrangonyx* Stebbing.
Eucrangonyx robertsi Methuen.

SUFFICIENT is now known of the fauna of South Africa to show us that nearly all the groups of animals found in this country include some creatures which are peculiar to it, and are also often lacking in forms dominant in other parts of the world. In the class Crustacea we find these facts admirably illustrated. We learn, however, that the three orders embracing these creatures are wholly unrepresented, and we are aware of the fact that freshwater crabs (Thelphusidae) and freshwater prawns (Atyidae and Palaemon) are the only Crustacea Malacostraca recorded from our rivers,* whereas the Crustacea Entomostraca are represented not only by forms having a wide distribution and which may range into the tropics, but by genera which are peculiar to South Africa.

Huxley, in "The Crayfish" (p. 336), makes the following remarks: "In warm climates . . . not only the large prawns, . . . but *Atyae* and fluviatile crabs (*Thelphusa*) compete for the possession of the freshwaters; and it is not improbable that, under such circumstances, they may be more than a match for crayfishes; so that the latter might either be driven out of territory they already occupied, as *Astacus leptodactylus* is driving out *A. nobilis* in the Russian rivers, or might be prevented from entering rivers already tenanted by their rivals.

"In connection with this speculation, it is worthy of remark that the area occupied by the fluviatile crabs is very nearly the same as that zone of the earth's surface from which crayfish are excluded, or in which they are scanty. That is to say, they are found in the hotter parts of the eastern side of the two Americas, the West Indies, Africa, Madagascar, southern Italy, Turkey and Greece, Hindustan, Burmah, China, Japan, and the Sandwich Islands. The large-clawed fluviatile prawns are found in the same regions of America, on both east and west coasts, in Africa, southern Asia, the Moluccas, and the Phillippine Islands; while the *Atyidae* not only cover the same area, but reach Japan, extend over Polynesia to the Sandwich Islands on the north and New Zealand on the south, and are found on both shores of the Mediterranean; a blind form (*Troglocaris schmidtii*), in the Adelsberg caves, representing the blind *Cambarus* of the caves of Kentucky." Madagascar, however, must be added to the list of countries in which species of *Palaemon* and *Atyidae*

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* It is true that one finds amphipods in freshwater or brackish vleis on the Cape Flats and in the Cape Peninsula; but these Crustacea are without doubt animals which have become accustomed in very late times to a mode of life neither marine nor yet truly freshwater.

ERRATA.

July, 1911, *Vol. III*, *No.* 2.

TRANSVAAL CRUSTACEA. PART II.

NOTICE OF A FRESHWATER AMPHIPOD FROM SOUTH AFRICA.

P. 96, line 5 : delete " however."

P. 96, line 6 : in place of " these creatures," read " the Crayfishes and the freshwater Isopods and Amphipods."

P. 97, line 41 : " taken " should read " taken* "
and at bottom of page read as note :

* For a detailed description *vide* Proc. Zool. Soc., Dec., 1911.

Also p. 96 : after " *Eucrangonyx robertsi* Methuen " add " Proc. Zool. Soc., Dec., 1911, p. 948, Pls. XLIX–LI."

are found in the rivers; this country, therefore, seems to be an exception to the general rule, for we find an isolated species of crayfish thriving where Thelphusidae, Atyidae, and *Palaemon* occur.

To what extent can we correlate the distribution of the freshwater amphipods with that of the crayfishes?

Gammarus occurs in both hemispheres, but appears to be absent from the tropics. In the southern hemisphere we find, according to Smith ("Freshwater Crustacea of Tasmania", Trans. Linn. Soc., 1909), such typical Tasmanian Crustacea as *Anaspides*, *Phreatoicus*, *Neoniphargus*, *Gammarus*, and *Boeckella*, distributed in temperate climes together with New Zealand forms, very few of which range into tropical zones. Two genera, *Chiltonia* and *Boeckella*, characteristic of temperate regions, occur in temperate South Australia, Tasmania, New Zealand; and in South America *Hyallela*, closely allied to *Chiltonia*, and *Boeckella* itself, have been found. The peculiar genus *Broteas* Loven, speaking purely from a geographical point of view, seems to take the place of the last-mentioned genus in South Africa.

Taking these facts into consideration, the discovery of a blind freshwater amphipod inhabiting caves in the Transvaal is not without its particular interest as indicating conceivably the remnant of a river fauna in its last stages of extinction by the present successful combination of crabs and prawns. In Madagascar, where the crayfish *Astacoides* still holds its own, we may be witnessing an earlier stage in the extermination of an older river fauna, which was similar to, or had much in common with, an ancient South African river fauna in which the ancestors of the subject of this paper may have had a place.

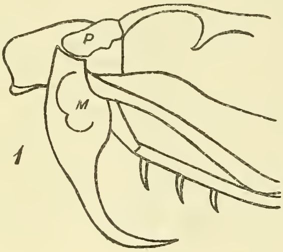
It would be as well, before speculating on the derivation of this little animal, to consider briefly its relationship to forms found in other parts of the world; for this purpose a short description at this point may not be out of place.

The Rev. Noel Roberts and Mr. J. Hewitt, of the Albany Museum, Grahamstown, are responsible for having first brought this animal to light and recognized its importance. They obtained examples some eighteen months ago from a cave containing a little fresh water at Irene, which is not far from Pretoria. Mr. Hewitt very kindly gave me the specimens to describe, and, hoping to get a larger series, I went with Mr. Austin Roberts to the Makapan Caves, near Potgietersrust. Here we found that two large caves supported a great number of these amphipods, besides some copepods and ostracods, and we were able to obtain some large and excellent specimens; it is from one of these, a large female, that the following somewhat abbreviated description has been taken.

Description of a Female from the Makapan Caves, Transvaal.—Length, 11 mm.; colour, dirty yellow or pink (according from which caves specimens were taken the colour was found to be dirty yellow or pink or semi-transparent white). Eyes absent. Body rather compressed, smooth, without carina; rostrum barely perceptible. The last three or five segments with spines on posterior margin.

The first four coxal plates of the pareion segments deeper than the rest, the first smallest, the third and fourth deepest; the fourth plate broader than the others; the side-plates of the fifth, sixth, and seventh pareion segments small, those of the fifth and sixth deeply emarginate behind apparantly. These coxal plates bear small spines marginally.

Antennules long, longer than the antennae; flagellum much longer than the peduncle; first joint of the peduncle a little shorter than the second and third joints together; second joint rather longer than the third; accessory flagellum two-jointed, armed with setae, hardly as long as first joint of flagellum. Each joint of antennule provided with setae, which on the flagellum after the eighth joint number seven, and display an unvarying arrangement.



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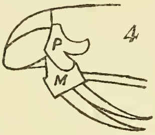

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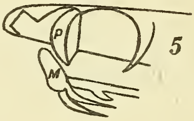

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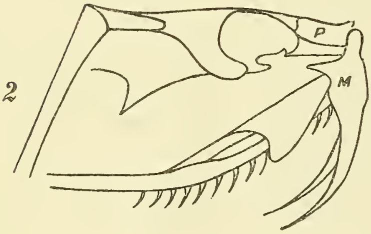

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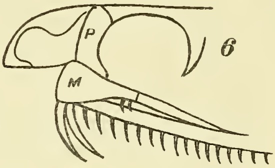

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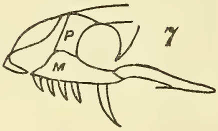

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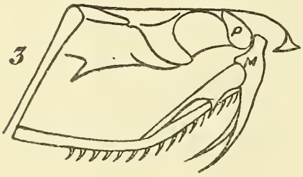

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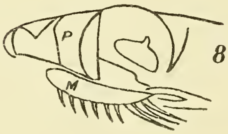

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Antennae: the peduncle longer than the flagellum; ultimate and penultimate joints of peduncle well provided with setae; the distal part of the flagellum joints carry about eight setae each, disposed in an unvarying sequence.

Mandibles of unequal size and of slightly different structure on each side; palp rather like that of *Paracrangonyx compactus* Chilton, except that the second joint is broader.

Maxillala much like that of *P. compactus*: the endite of the first joint bears two plumose setae and a number of hairs on the inner margin.

Maxilleped: not unlike that of *P. compactus*; however, slenderer, and the seventh joint is shorter.

Gnathopods well developed, subchelate; both pairs of about the same size and length; the fifth and sixth joints of gnathopod I somewhat broader than those of gnathopod II.

Pareiopods: numbers I and II subequal, shorter than the succeeding ones; number V the longest; second joint of numbers III, IV, and V broader than of I and II. All with normal setae. Terminal joint not elongated in the first two pairs.

Pleopods: normal; bear coupling hooks on basal portion; the longest pleopod is the second.

Uropods: the first is the longest; the third uropod not quite as long as the first; the second uropod about two-thirds as long as the first. The peduncle of the first long, longer than either rami, much longer than the peduncle of the second; peduncle of the second much longer than that of the third.

Outer ramus of the third uropod much longer than those of the first; inner ramus, with single spine, minute.

Telson: almost square, excavate: four spines on each side terminally, two subterminally.

It appears from the study of the external anatomy that this amphipod comes within the limits of the genus *Eucrangonyx*, and from Stebbing's account in "Das Tierreich" to resemble somewhat closely *E. vejdovskyi* Stebbing, which has been taken in wells near Prague. It has accordingly been placed in this genus, and near *E. vejdovskyi* for convenience' sake rather than by way of suggesting its origin, and a name in honour of Mr. Noel Roberts has been proposed for it.

It is in the nature of the uropods that *Eucrangonyx robertsi* seems to possess the chief character of distinction. Other characters suggest that it is related to *Paracrangonyx compactus*, from which, however, it differs in possessing normal pleopods, for in *P. compactus* these appendages are univamous; it is also more distantly related to the genus *Neoniphargus* Stebbing. This cave crustacean, therefore, possesses representatives to which it is closely allied in various parts of the world. The difficulty in determining exactly what is the form it is most nearly related to is due chiefly to the fact that convergence may possibly account for a good deal of similarity existing in two or more allied creatures living under similar conditions though widely separated.

Chilton, in his paper on the "Subterranean Crustacea of New Zealand" (Trans. Linn. Soc., 2nd ser., Zool., Vol. VI, Part 2, 1894), has pointed out the probability of the subterranean Crustacea of that island having been derived directly from surface freshwater forms, only indirectly or earlier in their history from allied marine animals. On p. 255 (*loc. cit.*) he says: "No doubt the subterranean Crustacea, as well as the freshwater forms, have originally sprung from forms inhabiting the sea, but from a fuller array of facts now before us there can be no doubt that they have not been derived directly from these, but from a freshwater fauna. *Niphargus* and *Crangonyx* (Chilton included *Paracrangonyx* in the genus *Crangonyx*) may, perhaps, show affinities to marine forms, and there certainly does not appear to be any closely allied form now inhabiting the surface freshwaters of Europe; but in North America various species of *Crangonyx* are found in surface streams, etc., and the fact that a closely allied form is found in the freshwaters of Tasmania seems to show that the genus has probably been at one time widely spread in the freshwaters of the globe." Later, he says: "While this conclusion seems to be well founded (in reference to the subterranean forms being derived from surface freshwater ones) it by no means follows that the subterranean fauna is necessarily derived from the freshwater fauna *at present* inhabiting the surface streams and lakes; indeed, there are several facts which seem to show that some species at any rate are derived from a more ancient surface fauna."

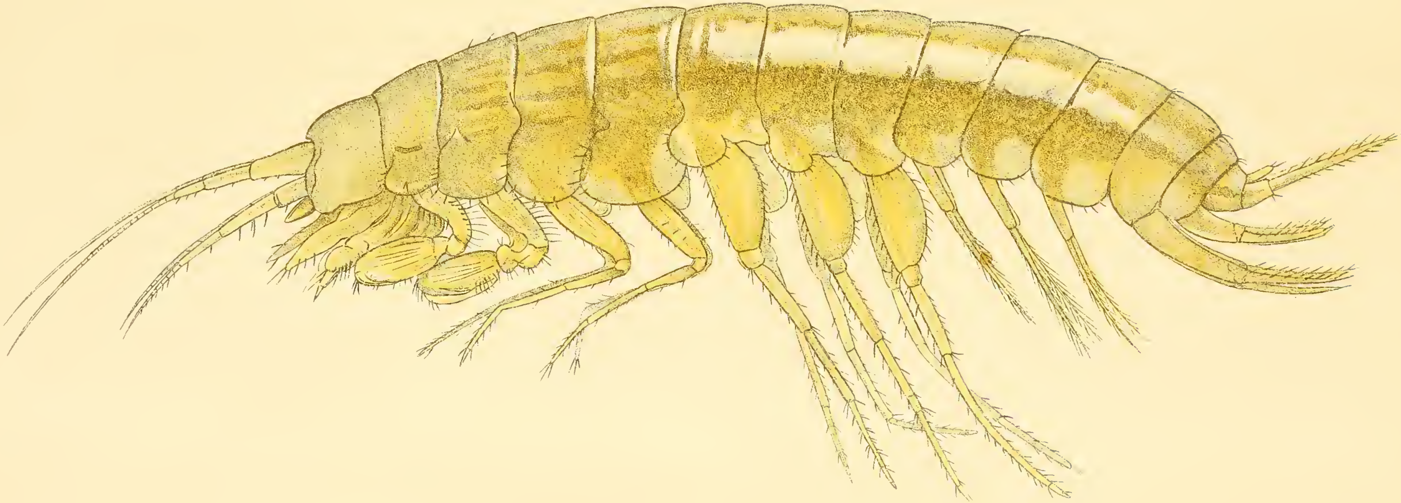
By placing this blind amphipod in the genus *Eucrangonyx*, I fear it may be interpreted that its origin has been largely implied by so doing. The suggestion that this is merely a case of the direct spreading of a cave form from Europe may possibly appear plausible as an explanation; but if we examine the question from this point of view, we quickly discover that the explanation is not as simple as it may seem at first. I am unaware that any fluviatile gammarid has been recorded from tropical Africa; if none exist there, then we must presuppose that some agent imported this cave gammarid from Europe; the transportation may have been effected slowly and gradually or in one or two journeys. Mr. Hewitt has suggested to me that either birds or bats might possibly have been the agents in question. However, in a letter a little later than this communication he wrote that he considered it difficult to see how gammarids could be carried by bats and birds, since these Crustacea have no resting eggs. Mr. E. C. Chubb, of the Durban Museum, was kind enough to give me an answer concerning the likelihood of bats being the means of dispersing this amphipod, which, together with great numbers of bats, was found to be about the only occupant of the caves visited. He thinks that it is highly improbable that bats are influential in the spread of cave-dwelling Crustacea; because (*a*) "the cave-dwelling bats are not migratory, and on the contrary are very restricted in their range". This, however, would not necessarily apply if these bats originated from Europe, thus to have facilitated the gradual dispersal of cave Crustacea. (*b*) "They never settle on the ground, so it is inconceivable that they could come into contact with mud, containing eggs of crustaceans, as is possible with birds." But the remark above about resting eggs may be recalled to memory. (*c*) "They do not, as a rule, feed or drink in the caves in which they sleep. They feed on the wing in the open at dusk, or during the night. . . . I should imagine they drink when skimming over the surface of the pools and streams in the open." This communication was given in reference to the Microchiroptera or insectivorous bats.

To say, therefore, that we see here a direct spreading of cave forms is not by any means the easiest way out of the difficulty.

Now, if we suppose that the ancestor of the *Gammarus-Crangonyx* group was widely distributed in the temperate fresh waters of the world, say, about the middle tertiary period or even somewhat earlier, would it be anything out of the way to find living at the present time a representative, a survival, of that crustacean stock in South Africa, showing relationship to forms living in other parts of the southern hemisphere? It is true that it has also near relatives in the northern hemisphere, to which it appears to be more closely allied; but might not this be largely a matter of convergence owing to a similar mode of life, and the remaining factor of resemblance due to the great similarity existing between members of this group, a factor which would place this South African amphipod no nearer the European than the American and Australian forms?

Further, owing to the structure of the telson there seems to be little doubt but that *Eucrangonyx robertsi* possesses a somewhat primitive or generalized organization within the *Gammarus-Crangonyx* group. Therefore, in case the name of this animal may appear to be misleading, let it be clearly understood that no closer connection to the species *Eucrangonyx vejdovskyi* is implied than that, within the limits of this gammarid group, only little departure from the theoretically generalized

[redacted]



West, Newman chr.

EUCRANGONYX ROBERTSI.

type has been taken, and that the change which has come about has induced in *Eucrangonyx robertsi* a decided likeness to *E. vejdovskyi*.

We must admit, in conclusion, that we cannot dogmatize in the matter of the origin of this detached cave-dweller. There seems to be insufficient evidence for us to assert definitely that it owed its origin to surface freshwater gammarids which may formerly have occupied the rivers of South Africa together, perhaps, with isopods and crayfishes. On the other hand, it is no easy matter to understand how, as a cave form, it has spread from Europe. The former theory, however, harmonizes pretty well with other facts concerning the dual nature of the South African fauna, and seems, on the whole, a likely explanation.

KORTE, VOORLOPIGE BESCHRIJVING VAN TE SENEKAL GEVONDEN STEGOCEPHALEN.

Door Dr. E. C. N. VAN HOEPEN, M.I.

(Met twee platen.)

De overblijfselen, welke hier worden bedoeld, werden gevonden in een voor bouwdoeleinden aangelegde zandsteengroeve, die zich bevindt in een kopje bij Senekal, Oranje Vrijstaat. Het grootste gedeelte werd aangekocht door het Staatsmuseum, terwijl van te voren reeds enkele schedelfragmenten (een stuk van het schedeldak en een klein stuk van maxilla en dentale met tanden) hun weg naar het museum van de Universiteitschool te Johannesburg hadden gevonden. Het door het Staatsmuseum aangekochte deel bestaat uit de bijna geheel volledige wervelkolommen (waarschijnlik ontbreken slechts enkele halswervels), de ledematen, de bekkenbeenderen en schoudergordels en het grootste gedeelte van de ventrale huid van drie tot dezelfde soort behorende Amphibieën. Bovendien is nog aanwezig een kop, iets langer dan 35 cm. en 36 cm. breed, waarvan het schedeldak alleen als afdruk bewaard is en waarvan enkele stukken afgebroken zijn, en een deel van de rechter mandibula en maxilla, met fragmenten der aangrenzende beenderen, van een tweede kop.

Daar het doel hiervan alleen is deze vondst mede te delen, zal nu slechts zoveel behandeld worden als nodig is, om de verhouding dezer versteningen tot reeds bekende voorlopig vast te stellen. Dit geschiedt vooral ook, omdat het uitwerken van het geheel nog geruime tijd zal in beslag nemen. Zodra dit is geschiedt zal de volledige beschrijving volgen.

SCHEDEL.

Ter voorlopige beschrijving is gekozen het onvolledige, bovengenoemde schedelfragment. Dit bestaat uit een deel van de rechter mandibula, de rechter maxilla en waarschijnlik delen van het rechter jugale en quadratojugale en een deel van het rechter palatinum en pterygoid of alleen het laatste. Het voorste gedeelte dezer beenderen is niet aanwezig; eveneens het achterste gedeelte van het pterygoid.

De Maxilla. De buitenzijde van de maxilla vertoont een ruw oppervlak. Het achterste gedeelte is voorzien van vrijwel evenwijdige, slingerende, soms door een dwarstak verbonden ruggen, waartussen diepe groeven. Naar achteren gaan deze over in putten; het is niet duidelik of deze putten zich bevinden op de maxilla of op het quadratojugale. Aan de binnenzijde van de maxilla staat een rij grote, dicht bij elkaar geplaatste tanden, die slechts met hun bovenste helft boven de buitenzijde van de maxilla uitsteken en naar achteren toe steeds kleiner worden (zie fig. 1, A).

Het Pterygoid en het Palatinum. Aan de binnenzijde van de maxilla ligt een driehoekig been, welks achterste en tevens breedste gedeelte zich naar binnen wendt en meehelpt om de slaapholte naar voren te begrenzen. Het vormt tevens de buitenbegrenzing van de gehemelteholten (zie fig. 1, B en C).

Het voorste, naar het vomer gerichte gedeelte is afgebroken, evenals dat gedeelte van het naar achteren en binnen gerichte stuk, dat, verlengd, zich met het parasphenoid zou verbinden. De naar de mondholte gekeerde zijde van dit been is voorzien van tweeërlei verhevenheden, welke tanden dragen. Deze tanden vertonen belangrijke verschillen onder elkaar en met die op de maxilla. In de eerste plaats bevindt zich dicht langs de maxilla een dikke ribbe, echter minder dik dan de straks te bespreken ribbe langs de dentale. De ruimte tussen genoemde ribbe en de maxilla is waarschijnlik glad of hoogstens van putjes voorzien. Op deze ribbe staat een rij grote tanden, die naar achteren toe kleiner worden. Zij staan echter zo, dat zij, tot op een derde van hun hoogte, langs hun buitenkant, nog beschermd worden door de verhevenheid waarop zij staan. Binnenwaarts volgt op deze reeks weer een vlak veld. Het overige, nog verder naar binnen gelegen deel van dit been, is voorzien van talrijke dicht bij elkaar gelegen, kleine ribben, die naar voren divergeren en vertakken, zodat de ruimten tussen hen niet steeds groter worden. Dicht bij de maxilla zijn deze ribben veel duideliker dan verder er vandaan. De gehele, met deze ribben voorziene oppervlakte, is bedekt met een menigte zeer kleine tandjes, die ook daar, waar de ribben minder duidelik worden, in grote massa's aanwezig zijn. Waar de ribben duidelik zijn ziet men direkt, dat de tandjes op de ribben staan, terwijl het op andere plaatsen lijkt alsof ze ook tussen de ribben voorkomen. In ieder geval staan ze zo dicht op elkaar, dat er geen ruimte tussen hen overblijft.

Voorlopig vat ik dit been op als te bestaan uit een stuk van het palatinum en een stuk van het pterygoid, nl. als een deel van de naar voren gerichte tak daarvan. Het palatinum (fig. 1, B) zou dan dat stuk zijn, dat aan de maxilla grenst en de ribbe met tanden draagt; bovendien zouden er de beide, langs deze ribbe zich bevindende, smalle vlakten toe gerekend moeten worden. Het pterygoid-stuk (fig. 1, C) is dan dat deel, dat de gehemelteholte naar buiten begrenst en met fijne ribben en kleine tandjes bedekt is.

De Mandibula. Het voorste gedeelte hiervan ontbreekt. Beennaden kunnen niet worden onderscheiden. Van uit het verdikte verbeningscentrum van het angulare (de hoek van dit been), verspreiden zich grove verhevenheden, die naar voren waarschijnlik overgaan in grove strepen, over zijn buitenoppervlakte. De gesteldheid bij het hoekpunt zelf is niet bekend. Op en bij het articulare, dat niet van de andere beenderen te scheiden is, is de oppervlakte bedekt met diepe putten. Het dentale is bedekt met grove, dikwijls afbrekende strepen, evenwijdig aan de richting van het been. Het spleniale dekt de mandibulaholte niet geheel af, doch laat aan de boven-binnenzijde achter de tanden een opening over. Een dergelijke, kleinere opening bevindt zich aan de onderrand, juist onder de achterste tanden en waarschijnlik begrensd door spleniale en angulare. Aan de binnenzijde van de dentale staat een rij tanden, die slechts met hun scherpe punt boven de buitenzijde van de dentale uitsteken (zie fig. 2) en naar achteren steeds kleiner worden. Aan de binnenzijde van deze tandenrij bevindt zich een dikke, hoge ribbe, die achter de tanden zich naar boven buigt en daar, de binnenrand van dit been vormende, niet meer van de dentale (of articulare ?) te onderscheiden is. Het kon niet worden uitgemaakt of deze ribbe gedragen wordt door de dentale of door het spleniale; waarschijnlik is het een verdikking van de dentale.

Tussen deze ribbe en de dentale ligt een smalle, met kleine groeven voorziene vlakte. De bovenste helft van de naar de mondholte gekeerde zijde van deze ribbe is bedekt met talrijke kleine tandjes, die even dicht op elkaar staan en even groot zijn als die op het pterygoid. De met tandjes bedekte oppervlakte strekt zich bijna even ver naar achteren uit als de rij grote tanden op de dentale.

De Tanden. De tanden op de dentale en op de maxilla en de rij grote tanden op het palatinum zijn pleurodont geplaatst. Het aantal op het aanwezige stuk dentale zich bevindende, boven de dentale rand uitstekende tanden bedraagt 29. Hun grootte neemt naar achteren geleidelik af. De tweede tand van voren heeft een lengte van 24·5 mm. zo goed mogelijk langs het midden van de platte zijde gemeten. De dertiende tand van achteren heeft nog een lengte van 16·5 mm., terwijl de achterste tand niet langer kan geweest zijn dan 7 à 8 mm. (alleen de onderste helft van deze tand is nog aanwezig). De onderlinge afstand der tanden is niet gelijk. Soms staan ze zo dicht op elkaar dat er geen ruimte over is voor nog een tand. Dit schijnt dan de normale toestand te zijn, want, waar er meer ruimte is, zoals tussen enkele der voorste tanden, die geheel zijn blootgelegd, bevindt zich tussen de grotere een kleine tand, die nog niet boven de buitenwand van de dentale uitsteekt. De lengte van een dezer kleine tanden is 8 mm. De vorm der tanden is spits konisch met naar binnen en naar achteren gebogen top. De doorsnede is platgedrukt ovaal, terwijl de lange as van het ovaal bij de meeste tanden een scherpe hoek maakt met het achterstuk van de dentale. Ook hellen de grotere tanden een weinig achterover. Het kan echter niet worden uitgemaakt of deze dubbele scheve stand oorspronkelik is.

De uiterste spits, zeg twee mm. bij de grootste, is glad. Dan volgt een oppervlakte met zeer fijne, verheven streepjes, evenwijdig aan de tandas; daaronder een oppervlakte, ongeveer twee derden van de tandhoogte, bedekt met groeven, ook evenwijdig aan de tandas. Deze groeven zijn zeer waarschijnlik ontstaan door plooiing. De binnenkant van de tand is opgevuld met kalkspaat. De uiterste spits van deze kalkspaatkegel is glad, doch meer naar beneden dringen er ribben (plooien), evenwijdig aan de tandas, in, die van de omgevende tandmassa uitgaan.

De overeenkomstige tanden op de maxilla zijn kleiner dan die op de mandibula. De grootste, aanwezige maxillatand is 14·7 mm. lang en de kleinste 5·1 mm. De onderlinge afstand dezer tanden is ook ongelijk, ze staan dikwijls tegen elkaar aan doch ook wel zover van elkaar af, dat hun afstand aan de maxillarand twee tanddikten bedraagt. De stand van de maxillatanden is ongelijk. De lange as van de ovaalvormige doorsnede staat meestal loodrecht op de maxilla-richting, doch bij enkele tanden maakt deze as een scherpe hoek met het voorste gedeelte en bij andere weer met het achterste gedeelte van de maxilla. De struktuur van deze tanden is dezelfde als van de mandibulatanden. Het aantal boven de maxillarand uitstekende tanden bedraagt 31.

De rij tanden op het palatinum, evenwijdig aan de rij op de maxilla, geeft dezelfde indruk als deze. Zij nemen naar achteren toe snel in grootte af; de twintigste tand van achteren af heeft een lengte van 14·5 mm., de vijftiende een lengte van 11 mm., de tiende van 10·4 mm., de achtste van 9·4 mm. en de eerste van achteren af een lengte van iets meer dan 7 mm. Deze rij tanden begint niet geheel achter op het been; hoewel de rug waarop ze staan iets vroeger begint, treft men de achterste tand pas op een afstand van ongeveer 2·5 cm. van de achterrand van het palatinum aan. Deze tand staat ongeveer tegenover de negende of tiende tand van achteren van de maxilla. De struktuur der palatinumtanden is dezelfde als die van de maxilla- en van de mandibula-tanden.

De kleine tandjes op de mandibula en op het pterygoid hebben een cirkelvormige doorsnede en een spitse kegelvorm. Op het pterygoid varieert hun grootte al naar de plaats waar ze voorkomen ; op de mandibula is dit blijkbaar niet het geval. De grootste tandjes op het pterygoid (het stuk van dit been nl. behorende bij het kleine schedelfragment) vormen een strook langs de gehemelteholte, terwijl er aan de andere kant van het getande oppervlak, dus nabij de slaapholterand, grote tandjes voorkomen, die niet een bepaalde strook vormen en naar achteren toe minder talrijk worden om ten slotte geheel plaats te maken voor nog kleinere tandjes. De twee laatste feiten zijn alleen te zien aan de meer volledige kop, evenals het feit, dat de strook tanden langs de gehemelteholte naar achteren toe ook voor nog kleinere tandjes plaats maakt.

Van de struktuur dezer kleine tanden kan nog niet veel worden medegedeeld. Met tienvoudige vergroting is alleen te zien, dat het tandoppervlak voor het grootste gedeelte bedekt is met zeer fijne, radiaire ribben, terwijl met twintigvoudige vergroting aan de onderkant nog geen groeven werden gezien. Het kleine kalkspaat-kegeltje in de tand vertoonde geen groeven als de tand nogal hoog was afgebroken ; bij zeer lage breuk zijn er duidelik plooien te zien. Later zullen ook van deze kleine tandjes dunne doorsneden worden gemaakt, waardoor dan waarschijnlik de struktuur beter aan het licht zal treden.

Achter of naast de grote palatinumtanden moeten nog enkele kleine tandjes worden vermeld, waarvan de betekenis nog niet geheel duidelik is, doch die waarschijnlik de jonge tanden zijn, die de oudere moeten vervangen. De vorm van deze tandjes wijkt af van die der andere tanden, doordat zij zodanig zijn samengedrukt, dat zij twee scherpe ribben vertonen.

Voor zover als kan worden nagegaan zijn alle beenderen van de schedelbasis van de meer volledige kop, behalve dan het palatinum, met kleine tandjes bedekt. Ook is aan het voorste gedeelte van de kop de afdruk aanwezig van een heel grote tand, waarvan echter nog niet kon worden uitgemaakt of deze zich op het vomer dan wel op het palatinum of op de maxilla zou bevinden.

Bovenstaande nu kan voldoende worden geacht om de plaats dezer versteningen tussen de overige stegocephalen vast te stellen. Daar de wervels uit losse stukken bestaan behoren zij tot de onderorde: *Temnospondyli*. Zij kunnen echter, blijkbaar, niet onder een der bekende genera thuis gebracht worden. Het meest nabij staan de genera : *Actinodon* Gaudry, *Nyrania* Fritsch, en *Rhinesuchus* Broom, waarvan alleen de laatste een zuidafrikaanse vorm is. Onze exemplaren verschillen van *Actinodon* daarom reeds, dat zij alle beenderen van de schedelbasis met kleine tandjes bedekt hebben, hetgeen bij genoemd genus niet het geval is. Van *Nyrania* verschillen zij, omdat, volgens citaat van Broom [Annals of the South African Museum, Vol. IV, Part VIII, "On a new Labyrinthodont (*Rhinesuchus Whaitsi*) from the Permian Beds of South Africa", bl. 376], er in dit genus blijkbaar geen tanden zijn op het parasphenoid en geen kleine tanden op de mandibula. Van het genus *Rhinesuchus* verschillen de stegocephalen van Senekal vooral, door het hebben van een rij grote tanden op het palatinum en door het ontbreken van kleine tandjes op dit been (zie Broom, l.c., bl. 375 en 376). Uit dit alles volgt blijkbaar, dat deze versteningen een nieuw genus vertegenwoordigen. De kenmerken van dit genus, welke uit bovenstaande beschrijving volgen, worden hier in het kort samengevat, doch deze samenvatting mag alleen worden beschouwd als voorlopig en daardoor nog onvolledig.

GENUS MYRIODON n.g.

Kop driehoekig, van voren afgerond, ongeveer even lang als breed. Maxilla en dentale dragen elk een rij grote, spitskegelvormige, naar achteren kleiner wordende, pleurodont geplaatste tanden, met waarschijnlik geplooide tandmassa. Binnen de rij der maxilla-tanden, waarschijnlik op het palatinum, staat een rij grote tanden, die dezelfde struktuur vertonen als de maxilla- en dentale-tanden. Op de overige beenderen van de schedelbasis staan grote drommen kleine tandjes, waarvan de grootste zelfs zeer en zeer veel kleiner is dan de reeds genoemde grote tanden. Dergelijke kleine tandjes bevinden zich ook op een, langs de rij dentale tanden zich bevindende, verhevenheid.

Species *Myriodon senekalensis* n.sp.

De voorlopige beschrijving van deze soort is reeds hierboven gegeven. Als type moet niet alleen het reeds meermalen genoemde schedelfragment worden beschouwd, doch ook de nu reeds ter aanvulling en kontrole gebruikte meer volledige schedel.

VERKLARING DER PLATEN.

PLAAT 1.

Fig. 1.—Schematiese schets van de onderzijde der maxilla en van het palatinum en het pterygoid.
- A. De maxilla met de pleurodont geplaatste tanden.
- B. Het als palatinum beschouwde been met de rij pleurodont geplaatste tanden.
- C. Het pterygoid met de talrijke kleine tandjes.

Fig. 2.—Doorsnede van de mandibula om het pleurodonte karakter te tonen en de stand van de ribbe met kleine tandjes. Been is gearceerd. In het midden ligt de mandibula-holte.

PLAAT 2.

Aanzicht van de buitenzijde van het behandelde schedelfragment in zijn oorspronkelike toestand. Bovenaan de maxilla; onderaan de mandibula. De tanden zijn die van de maxilla.

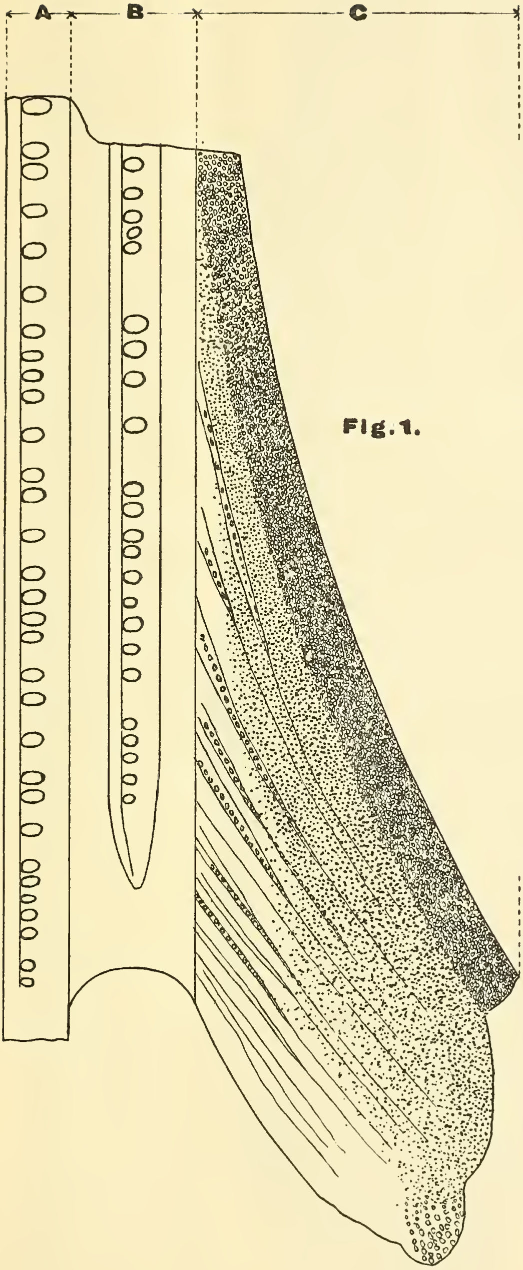


Fig. 1.

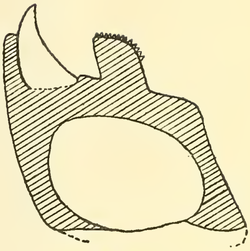
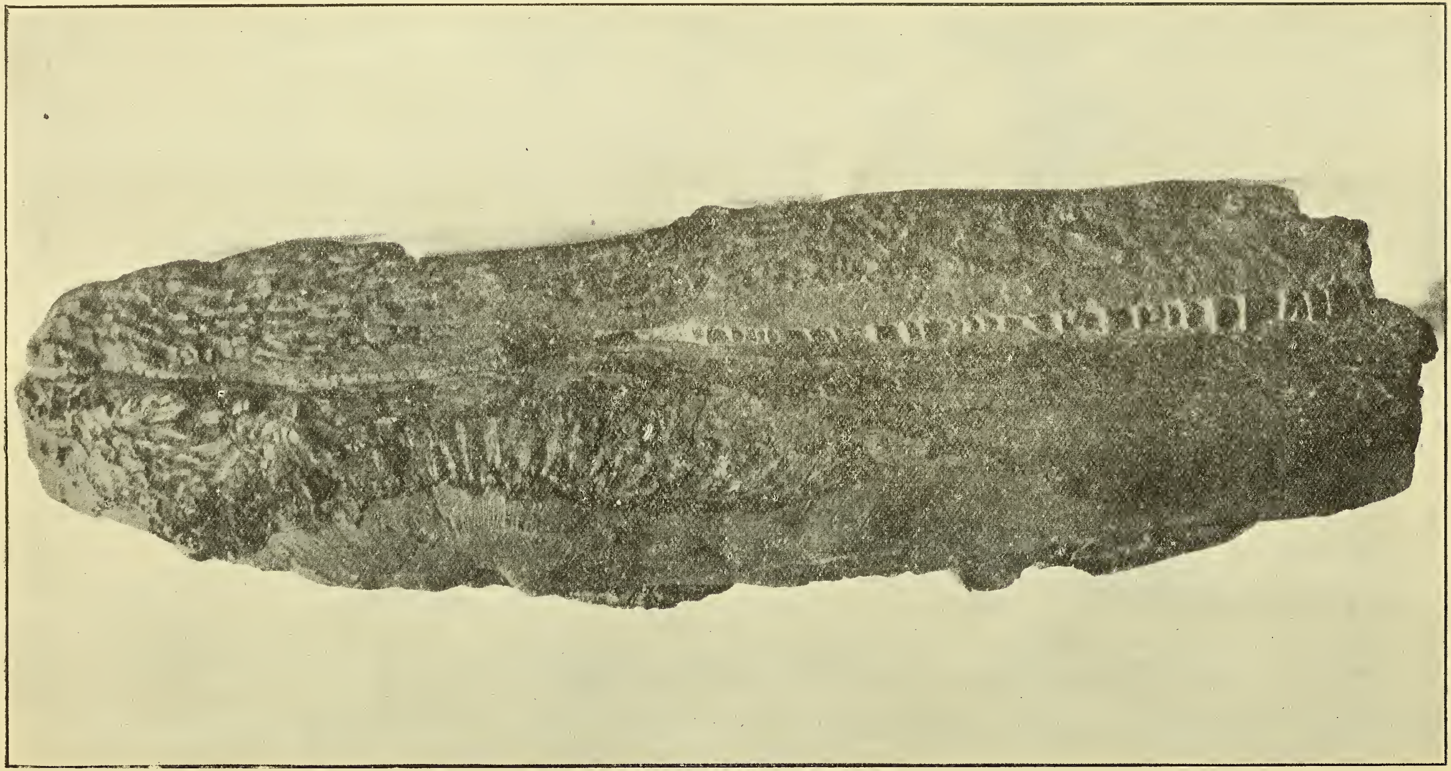


Fig. 2.

PLAAT II.

BOVENKANT.



ONDERKANT.

NEW RECORDS AND DESCRIPTIONS OF NEW SPECIES OF BIRDS IN THE TRANSVAAL MUSEUM COLLECTION.

By Dr. J. W. B. GUNNING (Director) and AUSTIN ROBERTS.

THE Transvaal Museum collection of bird-skins now numbers over ten thousand, and, as a result of reclassifying them, an interesting light is thrown on the distribution of many species; the whole collection will be detailed at a later date, but in the meantime we will mention the occurrence of several European migrants and purely African species not previously recorded from south of 15°, and describe a number of new species and subspecies.

NEW RECORDS OF EUROPEAN MIGRANTS.

Platalea leucorodia L., juv.; *ex* coll. Austin Roberts, Wakkerstroom, Transvaal, 27.IX.09.

Circaetus gallicus (Gm.), ♂; *ex* coll. Dr. J. W. B. Gunning, Pretoria, 2.VIII.08.

Sylvia nisoria (Bechst.), sex (?); *ex* coll. Austin Roberts, Venterskroon, Potchefstroom District, 18.II.09. The identity of the specimen has been kindly confirmed by Prof. Dr. Reichenow. Another specimen of this species has also recently been sent to us for identification, indicating by the label that it was collected on the Bulawayo Commonage, 29.I.11. Both specimens are in juvenile plumage.

AFRICAN SPECIES NOT PREVIOUSLY RECORDED FROM SOUTH AFRICA.

Circaetus cinereus Vieill.

(1) ♂; *ex* coll. late J. v. O. Marais, Doornfontein, Zoutpansberg District, Transvaal, 23.II.03.

(2) Sex (?); *ex* coll. Col. Damant, C.B., D.S.O., Lydenburg, 4.III.07.

(3) Sex (?); *ex* coll. C. B. Horsbrugh, Pretoria (no date).

Chlorophoneus abbotti Richm., a pair; *ex* coll. F. Vaughan-Kirby, Woodbush, N. Transvaal, January, 1908.

Ploceus aureoflavus A. Sm., adult and juvenile, ♂; collected by Kirby and Roberts, Boror, P. E. Africa, August, 1908.

NEW SPECIES AND SUBSPECIES.

Vinago orientalis, spec. nov.

Very similar to *V. wakefieldi* in having the head, neck, and undersurface, particularly the breast, yellowish green, but considerably larger, and having the band on the hindneck broader.

Type of ♂ T.M. No. 4757; coll. Kirby and Roberts, Villa Pereira, Boror, P.E. Africa, 7.VI.08.

(Iris, creamy white; bill, horn-blue; cere, crimson-scarlet; legs, crimson-scarlet; claws, horn-colour. Length, 290 mm.—K. & R.) Wing, 170; tail, 99; tars., 25; culm., 14; tip of outer tail-feather, 30 mm.

Type of ♀ T.M. No. 4756; same coll. and loc., 6.X.08. Differs from the male in not being so brightly suffused with yellowish, and its smaller size—length, (?); wing, 163; tail, 93; tars., 24; culm., 13 mm.

There are also in the collection five ♂♂ and two ♀♀ from Boror, Beira, and Hector Spruit, which give the following measurements:—

Wing ... 167–174 mm. Tail ... 94–102 mm.
" ... 163–165 " " ... 92–97 "

Pternistes castaneiventer, spec. nov.

Closely allied to *P. nudicollis*, from which it differs in having the breast chestnut coloured in general effect as compared with black, each feather having the outer portion chestnut.

This species has in the past been regarded as representing the juvenile plumage of *P. nudicollis*, but there are in the collection four adult ♂ skins in which the spurs are fully developed, two on each leg, and it must therefore be regarded as distinct. The distribution of these two species seems to be bounded by the Sundays River Valley, *P. nudicollis* occurring to the south and this new species to the north of that river only.

Type of ♂ T.M. No. 4998; *ex* coll. J. R. Ivy, Fort Beaufort District, 28.VIII.08. Wing, 200; tail, 105; tars., 55; culm., 24 mm.

Type of ♀ T.M. No. 4010; *ex* coll. J. G. Brown, Zuurberg, July, 1910. Wing, 190; tail, 90; tars., 50; culm., 20·5 mm.

Falco horsbrughi, spec. nov.

Closely allied to *F. ruficollis*, but larger, lacking the bars on the breast and having the crown streaked.

Crown in general effect chestnut with dark brown streaks, each feather having the base and shaft dark brown and the protruding portion chestnut; forehead and a patch on the ear-coverts yellowish white, the former merging into the colour of the crown; eyebrow and a broad patch extending below the eye through the cheeks black, the former, continuing backwards to the nape, extends down the hindneck and forms two more patches, one through the hinder ear-coverts and the other midway between the ear-coverts and hindneck; collar buffish below and between the black marks. Lower hindneck dark brown, merging below into the general grey and banded dark brown appearance of the lower back; middle and greater wing-coverts, inner secondaries, scapulars, and back grey banded with dark brown; upper tail-coverts like the back, but paler and whiter on the sides; tail also grey and banded, the last band very broad and the tip white. Feathers of the top of head, neck, upper back, and wing-coverts all more or less tipped with chestnut. Chin and throat white, washed with yellowish, merging into buff on the breast and vinous on the sides and flanks; under tail-coverts buffish white with short shaft marks and faint irregular cross-bands of black; sides of lower breast and flanks banded with brown, the former not so distinct and on a darker ground than the latter; thighs also cross-banded. Upper surface of primaries dark brown, tips of all and outer margin of the first dull white, inner webs banded with white, the first two inclining to rufous near the shafts; secondaries like the back, but whiter on the inner webs in all but the innermost, which are darker than the rest: primary coverts not so distinctly banded as the primaries; bastard wing like the primaries, but broadly margined on the outer webs with vinous buff; lesser wing-coverts black, margined with vinous buff. Primaries and secondaries paler on the under-surface; projecting under wing-coverts similar but banded across both webs; inner under wing-coverts more or less vinous and banded; edge of wing buff. Wing, 227; tail, 146; tars., 39; culm., 13·5 mm.

Type of ♂ T.M. No. 8454; *ex* coll. C. B. Horsbrugh, Pretoria, 24.X.04.

Type of ♀ T.M. No. 8455; same coll. and loc., 24.X.04.

The female is larger, more distinctly banded on under tail-coverts and less distinctly on the central tail-feathers. Wing, 240; tail, 160; tars., 41; culm., 15·5 mm.

These two specimens were shot by Mr. Horsbrugh near a nest, discovered by us a few minutes later, in which were three newly hatched young and an egg; an attempt was made to rear the former in the Zoological Gardens without success, and the latter was preserved and subsequently described by Mr. J. A. Bucknill in the *Journal of the South African Ornithologist's Union* under the name of *Falco ruficollis*, which the birds were then thought to be. The nest was brought to the Museum and mounted by Mr. Horsbrugh.

Pisorhina capensis (A. Smith).

In the collection is a series of fifteen skins of this species, representing four distinct races, which we propose to place as follows:—

Pisorhina capensis capensis.

Two adults from Grahamstown, one juvenile from Matatiele.

In general effect dark brown, strongly washed with rufous above, the tail in particular; tarsi rufous. Wing, 134–138; tail, 61 mm.

Pisorhina capensis intermedia, subsp. nov.

Nine adults and one juvenile from Transvaal (Modderfontein, Hector Spruit, Pretoria, Waterberg, and Middelburg Districts).

Differs from *P. c. capensis* in being much greyer in general effect, and not so strongly washed with rufous; streaks on the under-surface broader; no rufous on tail; tarsi white. Wing, 132–143; tail, 63–68 mm.

Type of ♂ T.M. No. 1391: *ex* coll. F. O. Noomé, Pretoria, 8.VI.08. Of ♀ T.M. No. 8125; *ex* coll. F. Streeter, Hector Spruit, E. Transvaal, 5.V.11.

Pisorhina capensis grisea, subsp. nov.

One adult from Bethulie, O.F.S.

Very similar to *P. c. intermedia*, but darker grey with hardly a trace of rufous; tail and tarsi grey.

Type of ♀ T.M. No. 1392; *ex* coll. R. Chambers, Bethulie, O.F.S., 23.VI.08. Wing, 143; tail, 65 mm.

Pisorhina capensis pusilla, subsp. nov.

Two adults, ♂♂, from Boror, Portuguese East Africa.

Quite distinct from the three foregoing in being whiter on the abdominal region, which is also not so profusely speckled and streaked; general effect grey suffused with fiery yellowish to chestnut; tail grey, washed with rufous; tarsi yellowish white. Wing, 127–129; tail, 56 mm.

Type T.M. No. 5218; *ex* coll. Kirby and Roberts, Namabieda, Boror, P.E. Africa, 31.IX.08.

Glaucidium capense rufum, subsp. nov.

This species differs mainly from *G. capense* in having from ten to twelve bars on the tail-feathers and not fourteen.

All feathers of top of head and hindneck brown, with an indication of chestnut on the forehead with two white bars, increasing to three or four on the nape and hindneck, with the base more rufous than white; back and inner scapulars of the same ground colour as the crown, but much suffused with rufous yellow, on the lower back yellowish white; upper outermost scapulars white for the greater part, next white on the outer margin, rufous and dark brown on the inner, and tipped with dark brown; towards the tail the white spreads across both webs, and the dark brown tip extends round the margin until quite encircling the white in some feathers. Rump and upper tail-coverts somewhat more rufous-shaded than the back. Central tail-feathers with eleven or twelve bars, outer ten or eleven, the greater figures referring to the paler colour. Primaries and secondaries dark brown, barred with rufous, becoming white towards the base of the inner webs and increasing towards the innermost secondaries, which are white for the greater part; secondaries white on the outer web also, forming spots. Primary coverts, greater wing-coverts, and bastard wing less distinctly barred than the primaries; middle wing-coverts brown, with a rufous spot on the inner web, for the greater part of the outer web white, forming a bar across the wing; bend of the wing and lesser wing-coverts like the back, but not so distinctly banded. Eyebrow, cheeks, and lores white, the last with protruding black bristles; chin and patch on centre of crop white; throat rufous brown; ear-coverts brown, variegated with white; breast white in the middle, banded on the sides and upper part with yellowish, red-brown, and white; remaining under-surface of body white tinged with buff, and thickly marked with triangular-shaped bars, red-brown on the lower portion and darker on the upper. Legs rufous in front, more or less banded, and uniform white behind. Under tail-coverts uniform, white tinged with buff. Under wing-coverts white or yellowish, more or less marked with dark and red-brown, axillaries pale sulphur yellow and not banded; edge of wing white.

Type of ♂ T.M. No. 4741; *ex* coll. Kirby and Roberts, Boror, P.E. Africa, 13.VIII.08. (Iris, sulphur yellow; bill, yellowish green, tip paler; feet, greenish yellow. Length, 206 mm.—K. & R.) Wing, 144; tail, 87; culm., 13 mm.

Type of ♀ T.M. No. 4744; same coll. and loc., 24.VII.08. Length, 215; wing, 137; tail, 80; culm., 13 mm.

In the collection there are also three more specimens from the same locality which are identical in colour with the types, and measure: length, 208–215; wing, 135–142; tail, 80–86; culm., 11–13 mm.

Dendromus albifacies, spec. nov.

Very similar to *Dendromus scriptoricauda* Reichenow, but differing in having a white eyebrow extending from the upper edges of the ear-coverts to the forepart of the eye, where it is separated from the white lores by a few dark brown feathers with white tips; the side of the face between the eye and red malar streak, as also the lores, pure white; rump and sides of upper tail-coverts distinctly paler than the back and middle upper tail-coverts, and forming a band across the former.

♂. Forehead, crown, and nape crimson; hindneck dark brown banded with whitish; remaining upper surface like the hindneck, but suffused with bright olive yellow on the upper back, middle upper tail-coverts, and external margins of wing feathers; tail dark yellowish indistinctly banded with dark brown, the shafts yellow and darker towards the tips. Feathers and bristles overlapping the nostrils yellowish; lores white, extending in a broad patch below the eye to the base of the ear-coverts white; small patches before and behind the eye dark brown, spotted with white; a broad white eyebrow, extending from the dark brown patch before the eye above the ear-coverts to the sides of the neck; ear-coverts more or less varied with white and brown; malar streak like the top of the head, whitish at the point projecting over the maxilla; chin white streaked with black; throat yellowish white, with a single row of round black spots between the malar streaks, but becoming more numerous on the lower part; breast more yellowish and the spots larger, the latter becoming fewer on the lower breast and flanks, and on the latter more in the form of bands; abdomen immaculate and under tail-coverts only slightly spotted; thighs varied with dark grey and brown. First and second primaries dark brown with two white marks at the base of the outer web; remaining primaries olive yellowish for the basal half of the outer web, banded more or less with pale yellowish, and with whitish tips in all but the third, the inner webs in all brown and the shafts yellow; secondaries like the primaries, but the shafts darker, the outer webs olive yellowish for a greater extent and the innermost banded across both webs and the bands more whitish; wing-coverts like the innermost secondaries for the greater part. Under wing-coverts yellowish white, more or less spotted with dark brown.

Type of ♂ T.M. No. 4717; *ex* coll. Kirby and Roberts, Villa Pereira, Boror, P.E. Africa, 15.VI.08. (Iris, scarlet; bill, dark brown, gonys pale yellow; legs and feet, olive green. Length, 216 mm.—K. & R.) Wing, 117; tail, 68; tars., 24; culm., 25 mm.

Type of ♀ T.M. No. 4718; same collection and locality (mate of foregoing). Length, 202; wing, 115; tail, 65; tars., 22; culm., 23 mm.

This differs from the ♂ in having the forehead and crown black with a roundish white or yellowish spot near the tip of each feather, the malar streak black, with the margins and tips of the feathers white, and more spots on the upper throat.

Also another ♀ from the same locality which measures: length, 203; wing, 113; tail, 71; tars., 22; culm., 23 mm.

Irrisor erythrorhynchus brevirostris, subsp. nov.

Closely resembles *I. erythrorhynchus viridis*, from which it is distinguished by its stouter and straighter bill, the crown and throat not so clearly glossed with blue, the back, scapulars, crop, and breast more glossed with bronze, and the primary coverts broadly tipped with white; tail also more bronze coloured.

Head metallic green, blue in some lights, the base of the metallic portion of each feather with a bronzy sheen; back and sides of neck, upper back, crop, and breast green, glossed with bronze, more pronounced on the scapulars; lower back and rump dark brown, faintly glossed with bronze violet; upper tail-coverts and tail bronze violet. Edge of wing, lesser and median wing-coverts violet; greater wing-coverts dull blue; primary coverts dull greenish, with broad white tips; primaries and secondaries greenish, glossed in parts with violet, especially on the innermost secondaries, and crossed by a white bar on the inner web of the first three and on both webs of the remainder. Throat greenish metallic blue. Abdominal region dark brown, glossed with blue, brightest on the thighs. Two outermost pairs of tail-feathers crossed by a white mark on each web, on the outer web farther from the tip than the inner; next pair with a white mark on the outer web only; rest of the tail-feathers uniform.

Type of ♂ T.M. No. 4653; *ex* coll. Kirby and Roberts, Villa Pereira, Boror, P. E. Africa, 1.VI.08. (Iris, dusky; bill and legs, red; claws, black. Length, 378 mm.—K. & R.) Wing, 142 ; tail, 200 ; tars., 23 ; culm., 44 mm.

Type of ♀ T.M. No. 4653, *ex* coll. Kirby and Roberts, Villa Pereira, 13.VI.08. Length, 353 ; wing, 127 ; tail, 192 ; tars., 23 ; culm., 38 mm.

Alseonax caerulescens pondoensis, subsp. nov.

This subspecies differs from the typical *A. caerulescens* in being much darker grey, the throat in particular grey and not white.

Type of ♂ T.M. No. 7288 ; *ex* coll. H. H. Swinny, Port St. Johns, Pondoland, 21.VII.09. (Iris, brownish hazel ; bill, blue-black, lighter below ; legs and feet, dark brown. Length, 145 mm.—H. H. S.) Wing, 75 ; tail, 75 ; tars., 16 ; culm., 12 mm.

Type of ♀ T.M. No. 7289 ; same collection and locality, 16.VII.09. Length, 142 ; wing, 70 ; tail, 58 ; tars., 16 ; culm., 12 mm.

There are also three more specimens in the Transvaal Museum from the same locality which are identical with the types.

Certhilauda daviesi, spec. nov.

This species is intermediate between *C. semitorquata* and *C. capensis*, differing from the former in being darker, more profusely streaked on the crop, and slightly larger, the beak stouter and the hindclaw exceeding 10 mm. in length ; from the latter it differs in being smaller, and in having the under-surface more fulvous coloured and the streaks not extending beyond the upper breast.

Top of head, neck, back, and scapulars dull vinous chestnut, streaked with dull black, the hindneck greyer and forming a collar ; rump clearer vinous, only very faintly streaked ; upper tail-coverts greyer than the rump and more distinctly streaked ; tail dark brown, broadly margined with rufous. Lores and an eyebrow streak, broadest above the ear-coverts, dull whitish varied with pale brown ; ear-coverts chestnut varied with dark brown ; sides of face buffish white with cross-bands of blackish ; chin and part of upper throat immaculate buffish white ; crop and breast vinous buffish, streaked with dark brown, sides of both darker and more vinous ; remaining under-surface of body pale buffish, the flanks darker and streaked with vinous ; under tail-coverts vinous, streaked with dark brown and margined with pale buffish ; under wing-coverts pale vinous. Primaries dark brown, narrowly edged externally and at the tips with very pale vinous ; secondaries more broadly margined with vinous rufous, the innermost on both webs and with only a dark brown shaft streak ; primary coverts dark brown edged with pale vinous ; greater coverts more broadly margined, and the remaining coverts pale vinous, with only the centres dark brown and the tips paler ; edge of wing varied dark brown and very pale vinous.

Type of ♂ T.M. No. 8444 ; *ex* coll. C. G. Davies, Matatiele, East Griqualand, 28.V.11. (Iris, hazel ; bill, dusky, base pale grey ; legs and feet, fleshy yellow.—C. G. Davies.) Wing, 105 ; tail, 78 ; tars., 30 ; culm., 23 mm.

Type of ♀ T.M. No. 8445 ; same data. Smaller than the ♂ and somewhat lighter coloured above and below. Wing, 93 ; tail, 68 ; tars., 28 ; culm., 19 mm.

A juvenile specimen from the same locality, T.M. No. 8446, is distinguished from the adults by its more vinous appearance above, the feathers of the nape, scapulars, and upper back with white tips ; region of the crop vinous and less distinctly streaked, and remaining under-surface white, inclining to rufous on the flanks. Wing, 95 ; tail, 70 ; tars., 27 ; culm., 16 mm.

There are also in the Transvaal Museum collection four males and three females from the same locality, which give the following measurements :—

Wing, 108–111 ; tail, 77–82 ; tars., 28–31 ; culm., 21–23 mm.
Wing, 93–98 ; tail, 69–73 ; tars., 28 ; culm., 19 mm.

Phyllastrephus capensis intermedius, subspec. nov.

This subspecies is intermediate between *P. capensis capensis* and *P. c. suahelicus*, differing from the former in being paler olive brown above and whiter below, and from the latter in being darker above and on the flanks, and paler on the under tail-coverts.

Type of ♂ T.M. No. 7831 ; *ex* coll. F. O. Noomé, Umbelluzi River, Portuguese S.E. Africa, 30.V.11. Wing, 88 ; tail, 91 ; tars., 23 ; culm., 20 mm.

Type of ♀ T.M. No. 7829 ; same locality, 28.V.11. Wing, 80 ; tail, 87 ; tars., 23 ; culm., 20 mm.

Also another specimen from the same locality.

Zosterops vaalensis, spec. nov.

This specimen was thought to be *Z. deserticola*, judging by its small size and similarity to *Z. sundevalli* ; but Prof. Dr. Reichenow, to whom it was referred, kindly compared it with the type, and expressed the opinion that it is referable to an undescribed species.

Entire upper surface from the crown to the upper tail-coverts and ear-coverts and sides of neck pale olive green washed with yellowish ; sides of forehead, lores, chin, and throat pale yellow ; under-surface of body and under tail-coverts pale yellow, paler than the throat ; sides of breast greyer and merging into a wash of tan-brown on the sides of the abdomen ; under wing-coverts white, faintly tinged with yellow ; primaries and secondaries, and tail-feathers, dark brown, externally margined with pale olive green washed with yellowish ; inner margins whitish. Bastard wing uniform dark brown ; edge of wing yellowish. Under the forepart of the eye a dark mark, extending towards and fading into the ear-coverts.

Type, ♀ T.M. No. 8403 ; *ex* coll. Austin Roberts, Venterskroon, Potchefstroom, 24.II.09. (Iris, brownish grey ; bill, dark brown, genys slate blue ; legs and feet, bluish slate. Length, 119 mm.—A. R.) Wing, 58 ; tail, 43 ; tars., 17 ; culm., 10 mm.

Apalis rhodesiae, spec. nov.

This species is closely allied to *A. murinus*, with the type of which it has been kindly compared by Prof. Reichenow, but differs in the ♂ having a dark brown streak below the eye.

Top of head, back, and sides of neck light grey brown ; back and wing-coverts dark grey ; rump yellowish ; upper tail-coverts and two central pairs of tail-feathers dark grey ; a dark brown mark extends from the anterior angle of the eye to the lower ear-coverts, below which it is faintly indicated on the sides of the neck. Cheeks, chin, and throat pure white, bordered below by a narrow black crescent, broader and terminating on the sides of the neck. Breast white, gradually assuming a yellowish hue on the abdomen ; thighs grey ; under tail and wing coverts white, the latter inclining to yellow. Primaries dark brown, edged externally with silvery grey, inner margins white for the basal two-thirds. Outermost tail-feathers dark grey at the base, for the remainder white ; penultimate pair also white for the greater part, but with more grey at the base ; antepenultimate dark grey for the greater part, the white only forming a tip and extending along the shaft for half the length of the feather; the next pair with a very narrow shaft streak, and the two central pairs uniform dark grey.

Type of ♂ T.M. No. 2443; *ex* coll. C. Wilde, Matabeleland, 5.X.05. Wing, 54; tail, 53; tars., 23; culm., 13 mm.

Type of ♀ T.M. No. 2444; same locality, 30.IX.05. Wing, 52; tail, 47; tars., 21; culm., 12·5 mm. This differs from the ♂ in lacking the dark mark below the eye and the crescent on the crop.

Apalis spelonkensis, spec. nov.

This species most closely resembles *A. thoracica*, but is readily distinguished by the yellow of the under-surface being brighter and extending to the lower throat, *above* the black crop-band.

Crown, forehead, and forepart of lores dark grey; nape, neck, back, scapulars, and rump olive green, upper tail-coverts and central tail-feathers dark ashy grey, the last with darker shafts. A dark brown streak extending from the hinder lores through the lower half of the ear-coverts all but joins the points of the crescent across the crop on the sides of the neck; cheeks, chin, and upper throat white; lower throat and remaining under-surface pale yellow throughout; under tail and wing coverts paler yellow, almost white; thighs grey. Primaries and secondaries dusky, outer margins of first three plain, of 4–6 or 7 silvery grey, and of the rest olive green; inner margins white towards the base. Wing-coverts like the primaries, but not so clearly washed with olive green. Outermost tail-feathers white except at the base, next white for the terminal two-thirds, antepenultimate with white tips tapering to a fine point on the shaft about the middle of the feather; remaining feathers dusky.

Type of ♂ T.M. No. 8407; *ex* coll. F. Vaughan-Kirby, Groot Spelonken, N. Transvaal, 24.VIII.09. (Iris, pale lemon; bill, black; legs and feet, flesh pink. Length, 130 mm.—F. V. K.) Wing, 53; tail, 54; tars., 24; culm., 13 mm.

Type of ♀ T.M. No. 8408; same locality, 9.VIII.09. Length, 129; wing, 51; tail 46; tars., 21; culm., 13 mm. This differs from the ♂ in the dark streak through the ear-coverts being dark grey instead of dark brown.

There are in addition to the types six specimens in the collection from Haenertsburg (Noomé) and Woodbush (Kirby), which give the following measurements:—

Wing, 53–56; tail, 47–56; tars., 22–23; culm., 13–14 mm.

Apalis venustus, spec. nov.

Very similar to *A. spelonkensis*, but the yellow of the throat is confined to a border above the black band; also, the under-surface is paler yellow and inclines to olive on the flanks, the upper tail-coverts olive green, the outer margins of the tail-feathers washed with olive green for the greater part, and the primaries not so clearly margined with silvery white, but more olive green.

Type of ♂ T.M. No. 8405; *ex* coll. H. H. Swinny, Port St. Johns, Pondoland, 20.X.10. (Iris, straw colour; bill, black; legs and feet, flesh colour. Length, 129 mm.—H. H. S.) Wing, 51; tail, 51; tars., 22; culm., 14 mm.

Type of ♀ T.M. No. 4229; same locality, 21.III.08. Length, 124; wing, 49·5; tail, 50; tars., 21; culm., 13 mm. This differs from the ♂ in having the crescent band only faintly indicated, but the black lores and mark below the eye are hardly less distinct than in the ♂.

Also another ♂ and ♀ from the same locality.

Apalis darglensis, spec. nov.

In this species the lower half of the throat is yellow as in *A. spelonkensis*, but in other respects it more closely resembles *A. venustus*; it is, however, easily distinguished from both by the under-surface being olive green, only the middle of the breast and abdomen being yellowish, mixed with white.

Type, ♀ T.M. No. 8404; *ex* coll. Austin Roberts, Dargle District, Natal, 6.IX.09. (Iris, cream colour; bill, black; legs and feet, flesh pink. Length, 125 mm.—A. R.) Wing, 52; tail, 49; tars, 22; culm., 13 mm.

Apalis flaviventris, spec. nov.

This species most closely resembles *A. thoracica*, but may be readily distinguished by the under-surface of body being white instead of olive coloured, and the yellowish wash forms a conspicuous patch on the abdomen; also, the wing-coverts are greyer and not so olive coloured, and the wings longer, measuring over 54 mm.

Top of head and back and sides of neck dark grey; back and rump dark grey washed with olive green, which increases towards and is most distinct on the latter; upper tail-coverts and central tail-feathers dark grey; wing-coverts greyer than the back; primaries and secondaries dark brown, outer margins silvery grey, inner margins white. A dark streak through the lores and lower ear-coverts dark brown; cheeks, chin, and throat pure white; a crescent-shaped band across the crop black; under-surface of body below the crop band white, assuming a yellowish wash towards the abdomen, which is pale yellowish; under tail and wing coverts white. Two outermost pairs of tail-feathers white, dark grey at the base; antepenultimate pair dark grey at the base and on the margins, for the remaining part white; the remaining feathers uniform dark grey.

Type of ♂ T.M. No. 8413; *ex* coll. Austin Roberts, Wonderboom, Pretoria, 9.IX.09. (Iris, cream colour; bill, black; legs and feet, flesh colour. Length, 132 mm.—A. R.) Wing, 59; tail, 56; tars., 23; culm., 14 mm.

Type of ♀ T.M. No. 8414; *ex* coll. F. O. Noomé, Wonderboom, Pretoria, 22.VI.11. Wing, 55; tail, 49; tars., 21; culm., 13 mm. This differs from the ♂ in having the dark streak below the eye paler.

Also four more specimens from the same locality. Wing, 55–56; tail, 54–56; tars., 21–22; culm., 13–13·5.

Camaroptera brachyura bororensis, subsp. nov.

Differs from *C. brachyura brachyura* in having the crown greyer and the remaining upper surface brighter olive yellow; the throat is also whiter, the flanks less olive coloured, and the tarsus longer.

Type, ♂, T.M. No. 5309; *ex* coll. Kirby and Roberts, Ngamwe, Boror, P.E. Africa, 2.VIII.08. (Iris, brownish yellow; bill, black; legs and feet, brownish flesh colour. Length, 121 mm.—K. & R.) Wing, 56; tail, 42; tars., 25; culm., 13 mm.

Camaroptera griseoviridis nooméi, subsp. nov.

This species is most closely allied to *C. g. sundevalli*, Sharpe (Cat., B.M.), from which it differs in having the upper surface tinged with a yellowish shade, the feathers of the rump with yellowish white tips on the sides, and the flanks more strongly washed with yellowish.

Type of ♂ T.M. No. 8438; *ex* coll. F. O. Noomé, Pongola River, N. Transvaal, 14.VII.10. Wing, 57; tail, 44; tars., 23; culm., 13·5 mm.

Type of ♀ T.M. No. 8437; same coll., Duiker River, Waterberg District, Transvaal, 28.VII.10. Wing, 52; tail, 39; tars., 23; culm., 14 mm.

Also another specimen from the same locality which measures: wing, 54; tail, 44; tars., (?); culm., 14 mm.

Monticola pretoriae, spec. nov.

Very similar to *M. brevipes*, with which it has been confused in the past, but has the top of the head uniform slate blue, no white eyebrow, and the dark brown margin on the outer tail-feather is more extended, measuring over 25 mm. in all specimens so far examined as against 16 mm. and under in *brevipes*.

Entire head, neck, scapulars, back, and throat slate blue, with the exception of a dark mark before the eye, and a somewhat darker shade on the back; rump, upper tail-coverts, and under-surface of body, including the crop, and under wing and tail coverts orange rufous, inclining to whitish on the abdomen. Primaries dark brown edged to the emargination with dull white, except the first and second which are uniform; bastard wing blackish with white tips; secondaries and all wing-coverts dark brown, margined externally and at the tips with dull white. Tail-feathers for the greater part orange rufous, the central pair dark brown for the terminal two-thirds, the outermost broadly margined on the outer web for the terminal half and the remaining feathers narrowly edged near the tips of the outer webs with dark brown.

Type of ♂ T.M. No. 8456; *ex* coll. Austin Roberts, Pretoria, 22.VII.09. (Iris, brown; bill, black; legs and feet, dusky. Length, 180 mm.—A. R.) Wing, 102; tail, 63; tars., 27; culm., 21 mm.

Type of ♀ T.M. No. 8457; same collection and locality, 19.VII.09. Length, 172; wing, 100; tail 62; tars., 27; culm., 21 mm. This differs from the ♂ in having the head, neck, scapulars, and back earth brown, tinged with rufous, in place of slate blue; cheeks and chin white; feathers of the throat white down the centre, on the sides earth brown with a white spot in the centre bordered by a darker mark, these white spots becoming fewer towards and disappearing on the sides of the throat and crop; lower surface paler rufous than the rump, irregularly crossed on the breast by wavy lines of dark brown, and whitish on the abdomen.

The Transvaal Museum collection also contains three ♂♂ and one ♀ from Pretoria, and one ♂ from Woodbush.

Cisticola pusilla, spec. nov.

Very similar to *C. rufa* of West Africa, but readily distinguished by the longer first primary, which exceeds half the length of the second.

Upper surface pale rufous brown, the crown darker; lores, chin, throat, and centre of abdomen white; flanks and thighs brownish buff, remaining under-surface paler buffish; under wing coverts silky vinous buff; tail-feathers very broad, the central pair like the back, but having a broad dark brown subterminal smudge and pale tip; the remaining tail-feathers with the subterminal mark more pronounced; primaries and secondaries dusky, with rufous outer and whitish inner margins; wing-coverts like the back.

Type of ♂ T.M. No. 4673; *ex* coll. Kirby and Roberts, Villa Pereira, Boror, P.E. Africa, 25.V.08. (Iris, grey; bill, brown; lower mandible, pale brownish pink; legs and feet, pale pinkish yellow. Length, 109 mm.—K. & R.) Wing, 48; tail, 38 (?); tars., 21; culm., 11 mm.

Type of ♀ T.M. No. 5292; *ex* coll. P. A. Sheppard, near Beira, 1.IX.0[illegible]. Wing, 42; tail, 38; tars., 21; culm., 11 mm.

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ANNALS MEDEDELINGEN

OF THE VAN HET

TRANSVAAL MUSEUM

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MEDEDELINGEN VAN HET Transvaal Museum.

VOL. III. MAY, 1912. No. 3.

A FIRST CHECK-LIST OF THE FLOWERING PLANTS AND FERNS OF THE TRANSVAAL AND SWAZILAND.

By JOSEPH BURTT-DAVY, F.L.S., F.R.S.S.Sf., F.R.G.S.,
Government Botanist, Department of Agriculture,
AND
Mrs. RENO POTT-LEENDERTZ,
Curator of Botany, Transvaal Museum.

INTRODUCTORY NOTE.

THIS first attempt at a published check-list of Transvaal plants does not profess to be either complete or critical, and we hope that its publication will induce readers to bring to our notice records which have been overlooked or species not yet recorded. Of the latter we are conscious that there are many, but these await the opportunity for critical study in comparison with authentically named specimens, most of which are to be found only in the larger European herbaria, more particularly those of Kew, Berlin, and Zurich. Though we have tried to catalogue all the literature, there are a few publications to which we have not had access, and the Rev. F. A. Rogers has kindly called attention to some which had been accidentally overlooked.

A census of the list gives approximately 3240 species, included in 920 genera and 157 families.

In its preparation I have mainly followed the Englerian arrangement of families and genera, as recorded by De Dalla Torre and Harms in their *Genera Siphonogamarum.* For the convenience of those more accustomed to the arrangement of Bentham and Hooker as followed in the *Flora Capensis*, a synopsis of the families is given on pp. 123–126, and an index of genera and families on pp. 127–172.

It has been considered wise to follow recent writers on the South African flora in their critical treatment of genera in the larger families, even if not in accord with De Dalla Torre and Harms; e.g. Mr. N. E. Brown in the Asclepiadaceæ and Labiatæ, Mr. R. A. Rolfe in the Selagineæ (here included in the Scrophulariaceæ in accordance with the Englerian system), Dr. Stapf in the Gramineæ, and Professor H. H. W. Pearson in the Thymelæaceæ. To enable a comparison to be made between the arrangement of this list and that of the *Genera Siphonogamarum*, and for means of reference, the generic and family numbers of the latter are here given in parentheses after the names.

Although inconsistent with the systematic arrangement of families and genera, the species are arranged alphabetically, partly from lack of information as to the relationships of many of those described since the publication of the earlier volumes of the *Flora Capensis*, but partly also for convenience of reference in the field and herbarium, which is the primary object of a check list. The scientific arrangement of families and genera has been adopted, however, as being less subject to change, and therefore more easily remembered and followed, especially when both synopsis and index are furnished.

The names of alien species naturalized or found wild in the country are printed in italics. Genera which are represented only by alien species are indicated by an asterisk before the name. It is not always easy to determine whether a species is alien or otherwise, e.g. in the case of *Cynodon Dactylon*, and it is possible that some species are erroneously treated as such.

Species admitted on doubtful authority are included within brackets and queried.

There are in our collections many species known to differ from any of those recorded here, and which are not yet identified; these have usually been omitted unless they belong to a genus not otherwise represented.

The amount of work involved in the preparation of a check-list, bare as it is, would astonish any one who has not attempted to make one. Though mainly a compilation, it involves no little critical work in the elimination of synonyms, homonyms, and erroneous records. In spite of every care, mistakes have undoubtedly been made, more than one such having come to light in the final reading of the MSS. before sending it to the printer. It would be impossible that no mistakes should have escaped detection; such will be found more easily, however, through the publication of this list, and will be corrected in the annotated catalogue now in course of preparation and intended to be published in the *South African Journal of Science*, from time to time, as completed.

Some will doubtless inquire why we publish this bare and necessarily incomplete list, instead of waiting for the completion of an accurate catalogue. Such was our intention, but the need was felt for a preliminary check-list to aid in the preparation of the more critical catalogue; moreover, the prospect of immediate publication of the latter, in complete form, was too remote to meet the needs of local botanists. A check-list is a valuable means of securing greater accuracy and completeness in the annotated catalogue. It is rather the fashion among professional botanists and zoologists to scorn the check-list, as such, but it is noticeable that the working biologist is usually glad to make use of it when the work has been done.

A check-list is also of great assistance in delimiting the geographical distribution of species, and the writer has felt the need of it greatly in the pursuit of his work in economic botany. It is also of value in stimulating the search for additional species by amateurs and nature lovers, which also hastens the completion of a full catalogue, and finally of a flora.

In the preparation of this list I have been greatly assisted by Mrs. Pott-Leendertz, who has furnished a large number of records and localities from the herbarium of the Transvaal Museum, and she is entirely responsible for the determination of the species recorded by her. Miss S. M. Stent has given valuable assistance in the determination of some of the records based on my own collections. To the late Dr. Bolus we were all deeply indebted for much valuable assistance and for his constant willingness to help. We are also indebted to Miss L. Kensit, F.L.S., Mr. J. Medley Wood, A.L.S., Dr. S. Schönland, F.L.S., Professor H. H. W. Pearson, F.L.S., Mr. T. R. Sim, F.L.S., Mr. E. E. Galpin, F.L.S., the Director and Staff of the Royal Botanic Gardens, Kew; Professor Dr. Hans Schinz, and Mr. Spencer le M. Moore, F.L.S., for assistance in [determining critical species or plants in which they are particularly interested. Finally, from Mrs. A. Tabateau, Mrs. Burtt-Davy, and Miss E. Tennant we have received much help in the tedious work of extracting records and verifying references, and to the latter we are indebted for the patience and pains taken in typing out the lists and compiling the index.

While it is recognized that there is some objection to publishing new combinations in a check list, there are a number of plants which have been waiting some time for names under the genus to which they are now assigned in *Die Naturlichen Pflanzenfamilien.* In dealing with these there were three alternatives open: (1) to leave them under the old generic name, which would involve the recognition of an unnecessary number of genera; (2) to write them down as, for example, " Berkheya sp. (= *Stobœa onopordifolia* DC.) ", which is cumbersome and occupies too much space, while leaving the plant without a proper name by which to handle it; (3) to rename them under the genus to which they are assigned. Of these the third seemed to be the least objectionable, and has been followed. In doing so I have tried to attribute the new combination to the author who has proposed the transfer, except where such change involved the adoption of an entirely new specific name. Dr. Stapf has most kindly given permission to complete his proposed transfer of certain of our species of Andropogon to Cymbopogon, which he restored to generic rank when working up the oil-grasses of India.

As far as we are aware the following new combinations appear here for the first time:—

Adenia digitata (*Harv.*) *Harms.* = *Modecca digitata* Harv.
Adenia gummifera (*Harv.*) *Harms.* = *Modecca gummifera* Harv.
Adenia hastata (*Harv.*) *Harms.* = *Modecca hastata* Harv.
Anemone canescens (*Szysz.*) *Prantl.* = *Knowltonia canescens* Szysz.
Anemone transvaalensis (*Szysz.*) *Prantl.* = *Knowltonia transvaalensis* Szysz.
Anemone Knowltonia *Burtt-Davy* = *Knowltonia gracilis* DC., not Anemone gracilis *Fr. Schmidt.*
Barbacenia humilis (*Baker*) *Pax.* = *Vellozia humilis* Baker.
Barbacenia retinervis (*Baker*) *Pax.* = *Vellozia retinervis* Baker.
Barbacenia rosea (*Baker*) *Pax.* = *Vellozia rosea* Baker.
Barbacenia Schlechteri (*Baker*) *Pax.* = *Vellozia Schlechteri* Baker.
Barbacenia villosa (*Baker*) *Pax.* = *Vellozia villosa* Baker.
Barbacenia violacea (*Baker*) *Pax.* = *Vellozia violacea* Baker.
Barbacenia viscosa (*Baker*) *Pax.* = *Vellozia viscosa* Baker.
Berkheya echinacea (*Harv.*) *O. Hoffm.* = *Stobœa echinacea* Harv.
Berkheya onopordifolia (*DC.*) *O. Hoffm.* = *Stobœa onopordifolia* DC.
Berkheya Radula (*Harv.*) *O. Hoffm.* = *Stobœa Radula* Harv.
Berkheya speciosa (*DC.*) *O. Hoffm.* = *Stobœa speciosa* DC.
Bonamia capensis (*Baker*) *Peter* = *Breweria capensis* Baker.
Bonamia capensis var. oligotricha (*Baker*) *Peter* = *Breweria capensis* var. *oligotricha* Baker.
Bonamia suffruticosa (*Schinz*) *Peter* = *Breweria suffruticosa* Schinz.
Bonamia suffruticosa var. hirsutissima (*Hall. f.*) *Peter* = *Breweria suffruticosa* var. *hirsutissima* Hall. *f.*
Choritænia capensis (*Sond. & Harv.*) *Benth. & Hook.* = *Pappea capensis* Sond. & Harv. (1862), not of Ecklon & Zeyher.
Cissus cirrhosa *Willd.* var. transvaalensis (*Szysz.*) *Gilg.* = *Vitis cirrhosa* var. *transvaalensis* Szysz.
Cissus humilis (*N. E. Br.*) *Gilg.* = *Vitis humilis* N. E. Br.
Cissus succulenta (*Galpin*) *Gilg.* = *Vitis succulenta* Galpin.
Coccinia natalensis (*Oliv.*) *Cogn.* = *Cephalandra natalensis* Oliv.
Cymbopogon hirtus (*Linn.*) *Stapf.* = *Andropogon hirtus* Linn.
Cymbopogon marginatus (*Steud.*) *Stapf.* = *Andropogon Nardus* Linn. var. *marginatus Steud.*
Cymbopogon validus *Stapf.* = *Andropogon Nardus* Linn. var. *validus* Stapf.
Cymbopogon pleiarthron *Stapf.* = *Andropogon pleiarthron* Stapf.
Cymbopogon plurinodis *Stapf.* = *Andropogon plurinodis* Stapf.
Cymbopogon excavatus (*Hochst.*) *Stapf.* = *Andropogon Schœnanthus* Linn. var. *versicolor* Steud.

Cymbopogon transvaalensis *Stapf.* = *Andropogon transvaalensis* Stapf.
Epaltes scabra (*Harv.*) *O. Hoffm.* = *Litogyne scabra* Harv.
Felicia asper (*DC.*) *O. Hoffm.* = *Diplopappus asper* DC.
Felicia filifolia (*DC.*) *O. Hoffm.* = *Diplopappus filifolius* DC.
Felicia serrulata (*Harv.*) *O. Hoffm.* var. xylophylla (*Klatt.*) *O. Hoffm.* = *Aster xylophyllus* Klatt.
Ficus Pretoriæ *Burtt-Davy* = *F. salicifolia* Vahl. var. *australis* Warb.
Heeria salicina (*Sond.*) *Engl.* = *Rhus salicina* Sond.
Hermannia coccocarpa (*E. & Z.*) *K. Schum.* = *Mahernia coccocarpa* E. & Z.
Hermannia multicaulis var. latifolia (*Harv.*) *K. Schum.* = *Mahernia erodioides* Burch. var. *latifolia* Harv.
Hermannia vestita (*Harv.*) *K. Schum.* = *Mahernia vestita* Harv.
Hoffmanseggia Sandersoni (*Harv.*) *Benth. & Hook.* = *Melanosticta Sandersoni* Harv.
Inula lanceolata (*Harv.*) *O. Hoffm.* = *Pegolettia lanceolata* Harv.
Ormocarpum trichocarpum (*Taub.*) *Harms.* = *Diphaca trichocarpa* Taub.
Pachystigma Cienkowskii (*Schweinf.*) *K. Schum.* = *Fadogia Cienkowskii* Schwein.
Pituranthos Burchellii (*Sond.*) *Benth. & Hook.* = *Deverra Burchellii* Sond.
Plectronia transvaalensis (*S. Moore*) *K. Schum.* = *Canthium transvaalensis* S. Moore.
Rhoicissus erythrodes (*Fres.*) *Planch.* var. ferruginea (*Baker*) *Gilg.* = *Vitis erythrodes* var. *ferruginea* Baker.
Rhoicissus rhomboidea (*E. Mey.*) *Planch.* var. transvaalensis (*Szysz.*) *Gilg.* = *Vitis rhomboidea* var. *transvaalensis* Szysz.
Sorghum halepense *Nees* var. effusum (*Stapf.*) *Burtt-Davy* = *Andropogon halepensis* var. *effusus* Stapf.
Sorghum vulgare *Pers.* var. Schenkii (*Körn.*) *Burtt-Davy* = *Andropogon Sorghum* Brot. var. *Schenkii* Körn.
Syzygium Gerrardi (*Harv.*) *Hochst.* = *Acmena Gerrardi* Harv.
Tragia cordata (*Harv.*) *Pax.* = *Ctenomeria cordata* Harv.
Tricalysia lanceolata (*Sond.*) *K. Schum.* = *Kraussia lanceolata* Sond.
Tricalysia pavettoides (*Harv.*) *K. Schum.* = *Kraussia pavettoides* Harv.

JOSEPH BURTT-DAVY.

Pretoria,
10*th November*, 1911.

SYNOPSIS OF FAMILIES.

GROUP I.—ARCHEGONIATÆ (Embryophyta Asiphonogama).

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CHECK-LIST.

1. OPHIOGLOSSACEÆ, Bitter.

1. Ophioglossum, Linn.
    1. reticulatum *Linn.*
    2. (vulgatum *Linn.* ?)

2. MARATTIACEÆ, Bitter.

2. Marattia, Smith.
    3. fraxinea *Smith.*

3. OSMUNDACEÆ, Diels.

3. Osmunda, Linn.
    4. regalis *Linn.*

4. Todea, Willd.
    5. barbara *Moore.*

4. GLEICHENIACEÆ, Diels.

5. Gleichenia, Smith.
    6. dichotoma *Willd.*
    7. polypodioides *Smith.*
    8. umbraculifera *Moore.*

5. HYMENOPHYLLACEÆ, Sadeb.

6. Hymenophyllum, Smith.
    9. lineare *Swartz.*
    10. rarum *R. Br.*

7. Trichomanes, Linn.
    11. pusillum *Swartz.*
        a. quercifolium *Hook. & Grev.*
    12. pyxidiferum *Linn.*
    13. rigidum *Swartz.*

6. SCHIZÆACEÆ, Diels.

8. Aneimia, Swartz.
    14. anthriscifolia *Schrad.*
    15. dregeana *Kunze.*
    16. tomentosa *Swartz.*

9. Mohria, Swartz.
    17. caffrorum *Desv.*

7. CYATHEACEÆ, Diels.

10. Cyathea, Smith.
    18. Dregei *Kunze.*

11. Hemitelia, R. Br.
    19. (capensis *R. Br.* ?)

8. POLYPODIACEÆ, Diels.

12. Woodsia, R. Br.
    20. burgessiana *Gerr.*

13. Aspidium, Swartz.
    21. aculeatum *Swartz.*
        a. pungens *Kaulf.*
    22. aristatum *Swartz.*
    23. falcatum *Swartz.*
    24. MacLeaii *Baker.*
    25. prolixum *Willd.*

14. Nephrodium, Rich.
    26. athamanticum *Hooker.*
    27. bergianum *Baker.*
    28. Buchanani *Baker.*
    29. catopteron *Hooker.*
    30. crenatum (*Forsk.*) *Sim.*
    31. Filix-mas *Rich.*
        a. elongatum *Hook. & Grev.*
    32. inæquale *Schltr.*
    33. molle *Desv.*
    34. Thelypteris *Desv.*
    35. unitum *R. Br.*

15. Oleandra, Cav.
    36. articulata *Cav.*

16. Davallia, Smith.
    37. concinna *Schrad.*
    38. speluncæ *Baker.*

17. Lomaria, Willd.
    39. attenuata *Willd.*
    40. boryana *Willd.*

18. Blechnum, Linn.
    41. australe *Linn.*

19. Asplenium, Linn.
    42. adiantum-nigrum *Linn.*
    43. anisophyllum *Kunze.*
    44. aspidioides *Schltr.*
    45. cicutarium *Swartz.*
        a. abyssinicum *Fée.*
    46. cuneatum *Lam.*
    47. erectum *Bory.*
        b. lunulatum (*Swartz.*) *Sim.*
        c. lobatum (*Pappe & Raws.*) *Sim.*
    48. furcatum *Thunb.*
        b. tripinnatum *Baker.*
    49. gemmiferum *Schrad.*
    50. Kraussii *Moore.*
    51. monanthemum *Linn.*
    52. prionitis *Kunze.*
    53. protensum *Schrad.*
    54. rutæfolium *Kunze.*
    55. Sandersoni *Hook.*
    56. varians *Hook. & Arn.*

8. POLYPODIACEÆ—*cont.*

20. GYMNOGRAMME, Desv.
   57. argentea *Mett.*
      b. aurea *Mett.*
   58. cordata *Schltr.*
   59. lanceolata *Hook.*
   60. ochracea *Presl.*

21. PELLÆA, Link.
   61. Boivini *Hook.*
   62. burkeana *Baker.*
   63. calomelanos *Link.*
   64. consobrina *Hook.*
   65. geraniæfolia *Fèe.*
   66. hastata *Link.*
      b. glauca *Sim.*
      c. macrophylla *Kunze.*
   67. involuta *Baker.*
   68. leucomelas *Baker.*
   69. pectiniformis *Baker.*

22. NOTHOCHLAENA. R. Br.
   70. Buchanani *Baker.*
   71. eckloniana *Kunze.*
   72. inæqualis *Kunze.*

23. CHEILANTHES, Swartz.
   73. Bolusii *Baker.*
   74. capensis *Swartz.*
   75. hirta *Swartz.*
      b. contracta *Kunze.*
   76. multifida *Swartz.*
      b. flexa *Kunze.*

24. HYPOLEPIS, Bernh.
   77. bergiana *Hook.*

25. ADIANTUM, Linn.
   78. æthiopicum *Linn.*
   79. Capillus-veneris *Linn.*
   80. caudatum *Linn.*
   81. rotundatum *Kunze.*

26. ACTINIOPTERIS, Link.
   82. radiata *Link.*

27. PTERIS, Linn.
   83. aquilina *Linn.*
   84. Buchanani *Baker.*
   85. cretica *Linn.*
   86. flabellata *Thunb.*
   87. longifolia *Linn.*
   88. quadri-aurita *Retz.*
      b. setifrons *Baker.*

28. LONCHITIS, Linn.
   89. pubescens *Willd.*

29. POLYPODIUM, Linn.
   90. incanum *Swartz.*
   91. lanceolatum *Linn.*
      b. sinuatum *Sim.*
   92. lineare *Thunb.*
      b. Schraderi *Mett.*

8. POLYPODIACEÆ—*cont.*

29. POLYPODIUM—*cont.*
   93. proliferum *Presl.*
   94. unitum *Hook.*
   95. vulgare *Linn.*

30. ACROSTICHUM, Linn.
   96. aureum *Linn.*
   97. viscosum *Swartz.*
      b. rupestre *Sim.*

9. MARSILIACEÆ, Sadeb.

31. MARSILIA, Linn.
   98. biloba *Willd.*
   99. Burchellii *A. Br.*
   100. macrocarpa *Presl.*

10. EQUISETACEÆ, Sadeb.

32. EQUISETUM, Linn.
   101. ramosissimum *Desf.*

11. LYCOPODIACEÆ, Pritz.

33. LYCOPODIUM, Linn.
   102. carolinianum *Linn.*
   103. cernuum *Linn.*
   104. clavatum *Linn.*
   105. dacrydioides *Baker.*
   106. gnidioides *Baker.*
   107. verticillatum *Linn.*

12. SELAGINELLACEÆ, Hieron.

34. SELAGINELLA, Spring.
   108. Dregei *Hiern.*
      a. pretoriensis *Hiern.*
   109. (integerrima *Spring.* ?)
   110. kraussiana *A. Br.*
   111. rupestris *Spring.*
   112. (tectissima *Baker* ?)

13. CYCADACEÆ, Lindl. (1).

35. ENCEPHALARTOS, Lehm. (5).
   113. (Altensteinii *Lehm.* ?)
   114. cycadifolius *Lehm.*
   115. Friderici-guilielmi *Lehm.*
   116. villosus *Lehm.*

14. TAXACEÆ, Lindl. (5).

36. PODOCARPUS, L'Hérit. (13).
   117. elongata (*Ait.*) *L'Hérit.*
   118. falcata (*Thunb.*) *R. Br.*
   119. latifolia (*Thunb.*) *R. Br.*

15. PINACEÆ, Lindl. (6).

37. Widdringtonia, Endl. (14).
  120. cupressoides *Endl.*

16. TYPHACEÆ, J. St. Hil. (8).

38. Typha, Linn. (49).
  121. australis *Schum. & Thonn.*

17. POTAMOGETONACEÆ, Engl. (11).

39. Potamogeton, (Tourn.) Linn. (58).
  122. crispus *Linn.*
  123. fluitans *Roth.*
  124. javanicus *Hassk.*
  125. lucens *Linn.*
    a. fluitans *Coss. & Germ.*
  126. natans *Linn.*
  127. pectinatus *Linn.*
  128. pusillus *Linn.*
  129. Richardii *Solms.*

18. NAJADACEÆ, Lindl. (12).

40. Najas, Linn. (64).
  130. interrupta *R. Schum.*

19. APONOGETONACEÆ, Engl. (13).

41. Aponogeton, Linn. f. (65).
  131. distachyon *Linn.*
  132. gracilis *Schinz.*
  133. Holubii *Oliv.*
  134. Rehmanni *Oliv.*
  135. spathaceum *Hook.*

20. HYDROCHARITACEÆ, Asch. (17).

42. Hydrilla, L. C. Rich. (86).
  136. (verticillata *Casp.* ?)

43. Lagarosiphon, Harv. (88).
  137. muscoides *Harv.*

21. GRAMINEÆ, B. Juss. (19).

44. Imperata, Cyril. (109).
  138. arundinacea *Cyril.*
    a. Thunbergii *Hack.*

45. Saccharum, Linn. (111).
  139. munroanum *Hack.*

46. Erianthus, (L. C. Rich.) Michx. (112).
  140. junceus *Stapf.*

47. Pollinia, Trin. (113).
  141. villosa *Spreng.*

21. GRAMINEÆ—*cont.*

48. Ischæmum, Linn. (119).
  142. glaucostachyum *Stapf.*

49. Rottboellia, Linn. f. (127).
  143. compressa *Linn.*
    a. fasciculata *Hack.*
  144. exaltata *Linn. f.*

50. Urelytrum, Hack. (125).
  145. squarrosum *Hack.*

51. Trachypogon, Nees. (131).
  146. polymorphus *Hack.*
    a. capensis *Hack.*

52. Elionurus, Humb. & Bonpl. (132).
  147. argenteus *Nees.*
    a. thymiodora (*Nees*) *Stapf.*

53. Andropogon, Linn. (134).
  148. amplectens *Nees.*
  149. appendiculatus *Nees.*
  150. brevifolius *Swartz.*
  151. ceresiæformis *Nees.*
  152. eucomus *Nees.*
  153. filifolius *Steud.*
  154. hirtiflorus *Kunth.*
    a. semiberbis (*Kunth.*) *Stapf.*
  155. intermedius *R. Br.*
    a. punctatus *Hack.*
  156. purpureo-sericeus *Hack.*
  157. schirensis *Hochst.*
    a. angustifolius *Stapf.*
  158. *sericeus* R. Br.

54. Sorghum, Pers. (—).
  159. halepense *Nees.*
    a. effusum (*Hack.*) *Burtt-Davy.*
  160. *vulgare* Pers.
    a. *Schenkii* (Körn.) Burtt-Davy.
  161. *saccharatum* (Linn.) Pers.

55. Heteropogon, Pers. (—).
  162. contortus *R. & S.*

56. Cymbopogon, Spreng. (—).
  163. excavatus (*Hochst.*) *Stapf.*
  164. hirtus (*Linn.*) *Stapf.*
  165. marginatus (*Steud.*) *Stapf.*
  166. pleiarthron *Stapf.*
  167. plurinodis *Stapf.*
  168. rufus (*Kunth.*) *Rendle.*
  169. Ruprechtii (*Hack.*) *Rendle.*
  170. transvaalensis *Stapf.*
  171. validus *Stapf.*

57. Themeda, Forsk. (136).
  172 Forskalii *Hack.*
    b. mollissima *Hack.*
    c. Burchellii *Hack.*

58. Paspalum, Linn. (161).*
  173. *dilatatum* Poir.
  174. *scrobiculatum* Linn.

21. GRAMINEÆ—*cont.*

59. DIGITARIA, Rich. (166).
175. eriantha *Steud.*
b. stolonifera *Stapf.*
176. monodactyla *Stapf.*
177. *sanguinalis* Scop.
178. ternata (*Hochst.*) *Stapf.*

60. PANICUM, Linn. (166).
179. æquinerve *Nees.*
180. brizanthum *Hochst.*
181. coloratum *Linn.*
182. *Crus-galli* Linn.
183. dregeanum *Nees.*
184. *Helopus* Trin.
a. glabrescens *K. Schum.*
185. hirsutissimum *Steud.*
186. hirticaulum *Presl.*
187. Holubii *Stapf.*
188. *Isachne* Roth.
189. lævifolium *Hack.*
190. maximum *Jacq.*
191. *miliare* Lam.
192. minus *Stapf.*
a. planifolium *Stapf.*
193. natalense *Hochst.*
194. nigropedatum *Munro.*
195. serratum *Spreng.*
196. trichopus *Hochst.*
197. typhurum *Stapf.*

61. OPLISMENUS, Linn. (169).
198. africanus *Beauv.*
a. capensis *Stapf.*

62. AXONOPUS, (Beauv.) Hook. f. (—)
199. semialatus *Hook. f.*
a. Ecklonii *Stapf.*

63. SETARIA, Beauv. (171).
200. aurea *A. Braun.*
201. flabellata *Stapf.*
202. Gerrardii *Stapf.*
a. purpurea *Stapf.*
203. *imberbis* R. & S.
204. lindenbergiana *Stapf.*
205. nigrirostris *Dur. & Schinz.*
206. perennis *Hack.*
207. sulcata *Raddi.*
208. *verticillata* (Linn.) Beauv.

64. PENNISETUM, L. C. Rich. (175).
209. cenchroides *Rich.*
210. sphacelatum *Dur. & Schinz.*
a. tenuifolium *Stapf.*
211. *spicatum* (Willd.) R. & S.
212. Thunbergii *Kunth.*

65. STENOTAPHRUM, Trin. (180).*
213. *glabrum* Trin.

66. ANTHEPHORA, Schreb. (140).
214. pubescens *Nees.*

21. GRAMINEÆ—*cont.*

67. TRICHOLAENA, Schrad. (168).
215. glabra *Stapf.*
216. grandiflora *Hochst.*
217. rosea *Nees.*
218. setifolia *Stapf.*

68. ARUNDINELLA, Raddi. (153).
219. Ecklonii *Nees.*

69. TRICHOPTERYX, Nees. (278).
220. dregeana *Nees.*
221. flavida *Stapf.*
222. simplex *Hack.*
b. sericea *Stapf.*

70. TRISTACHYA, Nees. (277).
223. (biseriata *Stapf.* ?)
224. leucothrix *Trin.*
225. Rehmanni *Hack.*

71. HOLCUS, Linn. (257).
226. *lanatus* Linn.

72. KOELERIA, Pers. (346).
227. cristata *Pers.*

73. AVENASTRUM, Juss. (—).
228. turgidulum *Stapf.*

74. AVENA, Linn. (273).*
229. *sativa* Linn.
230. *barbata* Brot.

75. ARUNDO, Linn. (331).*
231. *Donax* Linn.

76. PHRAGMITES, Trin. (333).
232. communis *Trin.*

77. AGROSTIS, Linn. (242).
233. *gigantea* Gaud.
234. lachnantha *Nees.*
235. *verticillata* Vill.

78. ARISTIDA, Linn. (208).
236. æquiglumis *Hack.*
237. angustata *Stapf.*
238. barbicollis *Trin. & Rupr.*
239. *congesta* R. & S.
240. Sciurus *Stapf.*
241. sericans *Hack.*
242. sieberiana *Trin.*
243. spectabilis *Hack.*
244. stipoides *Lam.*
245. uniplumis *Licht.*
246. vestita *Thunb.*
b. parviflora *Trin. & Rupr.*

79. PEROTIS, Ait. (148).
247. latifolia *Ait.*

80. TRAGUS, Hall. (143).
248. koelerioides *Asch.*
249. *racemosus* All.

21. GRAMINEÆ—*cont.*

81. Phleum, Linn. (223).*
250. *pratense* Linn.

82. Sporobolus, R. Br. (230).
251. festivus *Hochst.*
a. stuppeus *Stapf.*
252. fimbriatus *Nees.*
253. *indicus* R. Br.
254. Ludwigii *Hochst.*
255. Rehmanni *Hack.*

83. Pogonarthria, Stapf. (——).
256. falcata (*Hack.*) *Rendle.*

84. Diplachne, Beauv. (337).
257. biflora *Hack.*
258. fusca *Beauv.*

85. Eragrostis, Beauv. (341).
259. Atherstonei *Stapf.*
260. barbinodis *Hack.*
261. bicolor *Nees.*
262. biflora *Hack.*
263. brizoides *Nees.*
264. chalcantha *Trin.*
265. chloromelas *Steud.*
266. curvula *Nees.*
267. denudata *Hack.*
268. gummiflua *Nees.*
269. Lappula *Nees.*
b. divaricata *Stapf.*
270. lehmanniana *Nees.*
271. *minor* Host.
a. *megastachya* (Link.) Burtt Davy.
272. margaritacea *Stapf.*
273. nebulosa *Stapf.*
274. obtusa *Munro.*
275. pallens *Hack.*
276. patentissima *Hack.*
277. plana *Nees.*
278. poecilantha *Stapf.*
279. sclerantha *Nees.*
280. sporoboloides *Stapf.*
281. superba *Peyr.*
282. truncata *Hack.*
283. Wilmsii *Stapf.*

86. Cynodon, L. C. Rich. (282).
284. *Dactylon* (Linn.) Pers.
285. incompletus *Nees.*

87. Microchloa, R. Br. (281).
286. altera (*Rendle*) *Stapf.*
a. Nelsonii *Stapf.*
287. caffra *Nees.*
288. setacea *R. Br.*

88. Ctenium, Panz. (286).
289. concinnum *Nees.*

89. Harpechloa, Kunth. (285).
290. capensis *Kunth.*

21. GRAMINEÆ—*cont.*

90. Chloris, Swartz. (288).
291. gayana *Kunth.*
292. petræa *Thunb.*
293. pycnothrix *Trin.*
294. *virgata* Swartz.
b. *elegans* Stapf.

91. Eleusine, Gærtn. (304).*
295. *indica* (Linn.) Gærtn.

92. Dactyloctenium, Willd. (305).*
296. *ægyptiacum* (Linn.) Willd.

93. Lophacme, Stapf. (——).
297. digitata *Stapf.*

94. Crossotropis, Stapf. (——).
298. grandiglumis *Rendle.*

95. Triraphis, R. Br. (317).
299. Rehmanni *Hack.*

96. Enneapogon, Desv. (310).
300. mollis *Lehm.*
301. scoparius *Stapf.*

97. Schmidtia, Steud. (312).
302. bulbosa *Stapf.*

98. Leersia, Swartz. (194).
303. hexandra *Swartz.*

99. Phalaris, Linn. (204).
304. arundinacea *Linn.*
305. *bulbosa* Linn.
306. *canariensis* Linn.
307. *minor* Retz.
308. *paradoxa* Linn.

100. Fingerhuthia, Nees. (326).
309. africana *Lehm.*
310. sesleriæformis *Nees.*

101. Stiburus, Stapf. (——).
311. alopecuroides (*Hack.*) *Stapf*

102. Briza, Linn. (367).*
312. *maxima* Linn.
313. *minor* Linn.

103. Poa, Linn. (378).*
314. *annua* Linn.
315. *nemoralis* Linn.

104. Festuca, Linn. (385).
316. *arundinacea* Vill.
317. (caprina *Nees* ?)
318. scabra *Vahl.*

105. Vulpia, Gmel. (385).*
319. *yMuros* Gmel.

21. GRAMINEÆ—*cont.*

106. Pseudobromus, K. Schum. (216)
320. africanus (*Hack.*) *Stapf*

107. Bromus, Linn. (389).*
321. *maximus* Desf.
322. *unioloides* H. B. K.

108. Brachypodium, Beauv. (393).
323. flexum *Nees.*

109. Lolium, Linn. (395).*
324. *italicum* Linn.
325. *multiflorum* Lam.
326. *temulentum* Linn.
b. *arvense* Syme.

110. Hordeum, Linn. (410).*
327. *murinum* Linn.

22. CYPERACEÆ, J. St. Hil. (20)

111. Lipocarpha, R. Br. (452).
328. argentea *R. Br.*
329. pulcherrima *Ridley.*

112. Ascolepis, Nees. (454).
330. capensis *Ridley.*

113. Pycreus, Beauv. (——).
331. angulatus *Nees.*
332. betschuanus *C. B. Cl.*
333. chrysanthus *C. B. Cl.*
334. Cooperi *C. B. Cl.*
335. flavescens *Reichb.*
336. macranthus *C. B. Cl.*
337. Mundtii *Nees.*
338. nitens *Nees.*
339. oakfortensis *C. B. Cl.*
340. pulvinatus *Nees.*
341. rehmannianus *C. B. Cl.*
342. umbrosus *Nees.*

114. Cyperus, Mich. (459).
343. albostriatus *Schrad.*
344. amabilis *Vahl.*
345. aristatus *Rottb.*
346. castaneus *Willd.*
347. compactus *Lam.*
b. flavissimus *C. B. Cl.*
348. denudatus *Linn. f.*
349. difformis *Linn.*
350. distans *Linn. f.*
351. *esculentus* Linn.
352. fastigiatus *Rottb.*
353. hæmatocephalus *C. B. Cl.*
354. immensus *C. B. Cl.*
355. latifolius *Poir.*
b. angustifolius *Krauss.*
356. longus *Linn.*
357. marginatus *Thunb.*
358. margaritaceus *Vahl.*
359. parvinux *C. B. Cl.*
360. prasinus *Kunth.*
361. pulcher *Thunb.*
362. *rotundus* Linn.
363. semitrifidus *Schrad.*
364. sexangularis *Nees.*

22. CYPERACEÆ—*cont.*

114. Cyperus—*cont.*
365. sphærocephalus *Vahl.*
366. sphærospermus *Schrad.*
b. triqueter *Bœck.*
367. tenax *Bœck.*
368. Teneriffæ *Poir.*
369. usitatus *Burch.*

115. Mariscus, Gærtn. (——).
370. albomarginatus *C. B. Cl.*
a. binucifer *C. B. Cl.*
371. capensis *Schrad.*
372. congestus *C. B. Cl.*
373. deciduus *C. B. Cl.*
374. dregeanus *Kunth.*
375. Marlothii *C. B. Cl.*
376. rehmannianus *C. B. Cl.*
377. sieberianus *Nees.*

116. Courtoisia, Nees. (461).
378. cyperoides *Nees.*
a. spicata *C. B. Cl.*

117. Kyllinga, Rottb. (462).
379. alba *Nees.*
b. alata (*Nees*) *C. B. Cl.*
380. cylindrica *Nees.*
381. erecta *Schumach.*
382. melanosperma *Nees.*
383. pulchella *Kunth.*

118. Ficinia, Schrad. (465).
384. filiformis *Schrad.*
385. stolonifera *Bœck.*

119. Eriophorum, Linn. (466).
386. angustifolium *Roth.*

120. Fuirena, Rottb. (467).
387. chlorocarpa *Ridley.*
388. Ecklonii *Nees.*
389. pachyrrhiza *Ridley.*
390. pubescens *Kunth.*

121. Scirpus, (Tourn.) Linn. (468).
391. articulatus *Linn.*
392. Burkei *C. B. Cl.*
393. cernuus *Vahl.*
394. corymbosus *Roth.*
395. fluitans *Linn.*
396. Hystrix *Thunb.*
397. Isolepis *Bœck.*
398. macer *Bœck.*
399. quinquefarius *Hamilt.*
400. rarius *C. B. Cl.*
401. semiuncialis *C. B. Cl.*
402. setaceus *Linn.*

122. Fimbristylis, Vahl. (471).
403. complanata *Linn.*
a. kraussiana *C. B. Cl.*
404. diphylla *Vahl.*
405. exilis *R. & S.*
406. ferruginea *Vahl.*
407. monostachya *Hassk.*

22. CYPERACEÆ—*cont.*

123. Bulbostylis, Kunth. (471).
  408. Burchellii *C. B. Cl.*
  409. cinnamomea *C. B. Cl.*
  410. collina *Kunth.*
  411. filamentosa *Kunth.*
  412. humilis *Kunth.*
  413. Schlechteri *C. B. Cl.*
  414. scleropus *C. B. Cl.*
  415. striatella *C. B. Cl.*
  416. Zeyheri *C. B. Cl.*

124. Costularia, C. B. Cl. (482).
  417. natalensis *C. B. Cl.*

125. Cladium, P. Br. (489).
  418. Mariscus *R. Br.*

126. Rhynchospora, Vahl. (492).
  419. glauca *Vahl.*

127. Eriospora, Hochst. (512).
  420. rehmanniana *C. B. Cl.*
  421. villosula *C. B. Cl.*

128. Scleria, Berg. (515).
  422. hirtella *Swartz.*
    b. tuberculata *Bœck.*
  423. Rehmannii *C. B. Cl.*
  424. Woodii *C. B. Cl.*

129. Carex, Dill. (525).
  425. acutiformis *Ehrh.*
  426. africana *Linn.*
    a. Barberæ *C. B. Cl.*
  427. drakensbergensis *C. B. Cl.*
  428. dregeana *Kunth.*
  429. petitiana *A. Rich.*
  430. Phacota *Spreng.*
  431. spartea *Wahlenb.*
  432. spicato-paniculata *C. B. Cl.*

23. PALMÆ, Linn. (21).

130. Phœnix, Linn. (528).
  433. reclinata *Jacq.*

131. Hyphæne, Gærtn. (553).
  434. (coriacea *Gærtn.*)
    (a. minor *Drude* ?)
  435. crinita *Gœrtn.*
  436. ventricosa *Kirk.*

24. ARACEÆ, Neck. (23).

132. Zantedeschia, Spreng. (748).
  (= Richardia *Fl. Cap.*)
  437. angustiloba (*Schott.*) Engl.
  438. hastata (*Hook. f.*) *Engl.*
  439. Rehmannii (*N. E. Br.*) *Engl.*

133. Colocasia, Schott. (755).*
  440. *antiquorum* Schott.

24. ARACEÆ—*cont*

134. Stylochiton, Leprieur. (764).
  441. natalense *Schott.*

25. LEMNACEÆ, Dumort. (24).

135. Wolffia, Horb. & Schleid. (796).
  442. Michelii *Schleid.*

26. RESTIONACEÆ, Hieron. (26).

136. Leptocarpus, R. Br. (808).
  443. paniculatus *Masters.*

27. XYRIDACEÆ, Lindl. (29).

137. Xyris, Gronov. (826).
  444. capensis *Thunb.*
  445. filiformis *Lam.*
  446. Rehmanni *Nilss.*
  447. umbilonis *Nilss.*

28. ERIOCAULACEÆ, Lindl. (30).

138. Eriocaulon, Linn. (828).
  448. sonderianum *Körn.*
  449. transvaalicum *N. E. Br.*

139. Paepalanthus, Mart. (830).
  450. Wahlbergii *Körn.*

29. COMMELINACEÆ, Reich. (33).

140. Commelina, Plum. (896).
  451. africana *Linn.*
    b. Barberæ, *C. B. Cl.*
    c. lancispatha *C. B. Cl.*
  452. albescens *Hassk.*
  453. benghalensis *Linn.*
  454. eckloniana *Kunth.*
  455. karooica *C. B. Cl.*
  456. krebsiana *Kunth.*
  457. Livingstonei *C. B. Cl.*
  458. madagascarica *C. B. Cl.*
  459. subulata *Roth.*

141. Aneilema, R. Br. (899).
  460. æquinoctiale *Kunth.*
  461. dregeanum *Kunth.*
    b. Galpini *C. B. Cl.*

142. Coleotrype, C. B. Cl. (903).
  462. natalensis *C. B. Cl.*

143. Cyanotis, D. Don. (908).
  463. nodiflora *Kunth.*

144. Floscopa, Lour. (908).
  464. glomerata *Hassk.*

30. PONTEDERIACEÆ, Meissn. (34)

145. HETERANTHERA, R. & P. (924).
465. kotschyana *Fenzl.*

31. JUNCACEÆ, Vent. (36).

146. JUNCUS, (Tourn.) Linn. (936).
466. (brevistilus *Buch.* ?)
467. capensis *Thunb.*
    a. capitatus *Nees.*
468. dregeanus *Kunth.*
469. exsertus *Buch.*
470. punctorius *Linn. f.*
471. rostratus *Buch.*

147. LUZULA, DC. (937).
472. africana *Drege.*

32. LILIACEÆ, Hall. (38).

148. GLORIOSA, Linn. (963).
473. superba *Linn.*
474. virescens *Lindl.*

149. LITTONIA, Hook. (964).
475. modesta *Hook.*

150. ANDROCYMBIUM, Willd. (969).
476. Dregei *Presl.*
477. melanthioides *Willd.*
    b. acaule *Baker.*
    c. subulatum *Baker.*

151. ORNITHOGLOSSUM, Salisb. (973).
478. glaucum *Salisb.*
    b. grandiflorum *Baker.*

152. IPHIGENIA, Kunth. (975).
479. Schlechteri *Engl.*

153. BULBINELLA, Kunth (984).
480. Burkei *Benth.*

154. BULBINE, Linn. (985).
481. asphodeloides *R. & S.*
482. cæspitosa *Baker.*
483. filifolia *Baker.*
484. narcissifolia *Salm-Dyck.*
485. præmorsa *R. & S.*
486. transvaalensis *Baker.*

155. ANTHERICUM, Linn. (989).
487. anceps *Baker.*
488. angulicaule *Baker.*
489. Conrathii *Baker.*
490. Cooperi *Baker.*
491. divaricatum *Baker.*
492. elongatum *Willd.*
493. fasciculatum *Baker.*
494. Galpinii *Baker.*
495. Gerrardii *Baker.*
496. Junodii *Baker.*

32. LILIACEÆ—*cont.*

155. ANTHERICUM—*cont.*
497. longistylum *Baker.*
498. MacOwani *Baker.*
499. micranthum *Baker.*
500. multisetosum *Baker.*
501. patulum *Baker.*
502. (pilosum *Baker.* ?)
503. polyphyllum *Baker.*
504. pretoriense *Baker.*
505. (pubescens *Baker.* ?)
506. radula *Baker.*
507. Rehmanni *Baker.*
508. Schultesii *Baker.*
509. subulatum *Baker.*
510. transvaalense *Baker.*
511. tricophlebium *Baker.*
512. triflorum *Ait.*
    b. minor *Baker.*
513. vaginatum *Baker.*
514. vestitum *Baker.*
515. Wilmsii *Diels.*

156. CHLOROPHYTUM, Ker. (990).
516. Bowkeri *Baker.*
517. elatum *R. Br.*
518. Haygarthii *Wood & Evans.*
519. nigricans *Baker.*
520. strictum *Baker.*

157. SCHIZOBASIS, Baker. (1010).
521. flagelliformis *Baker.*
522. intricata *Baker.*

158. BOWIEA, Harv. (1011).
523. volubilis *Harv.*

159. ERIOSPERMUM, Jacq. (1012).
524. Bellendeni *Sw.*
525. Burchellii *Baker.*
526. dissitiflorum *Schltr.*
527. Galpinii *Schinz.*
528. hygrophilum *Baker.*
529. Junodii *Baker.*
530. luteo-rubrum *Baker.*
531. porphyrovalve *Baker.*
532. Schinzii *Baker.*
533. tenellum *Baker.*

160. KNIPHOFIA, Moench. (1024).
534. aloides *Moench.*
535. Conrathii *Baker.*
536. crassifolia *Baker.*
537. ensifolia *Baker.*
538. foliosa *Hochst.*
539. Galpini *Baker.*
540. natalensis *Baker.*

161. NOTOSCEPTRUM, Benth. (1025).
541. aloöides *Benth.*

162. ALOE, (Tourn.) Linn. (1026).
542. arborescens *Mill.*
    a. frutescens(*Salm-Dyck*) *Baker.*
543. Bainesii *Dyer.*

32. LILIACEÆ—*cont.*

162. ALOE—*cont.*
544. Boylei *Baker.*
545. castanea *Schönl.*
546. cinnabarina *Diels.*
547. Cooperi *Baker.*
548. Dyeri *Schönl.*
549. Ecklonis *Salm-Dyck.*
550. (Greenii *Baker.* ?)
551. Kraussii *Baker.*
b. minor *Baker.*
552. lineata *Haw.*
553. Marlothii *Berger.*
554. micrantha *Haw.*
555. minima *Baker.*
556. Pegleræ *Schönl.*
557. pluridens *Haw.*
558. transvaalensis (*Ktze.*) *Schönl.*

163. GASTERIA, Duval. (1027).
559. transvaalensis *Hort.*

164. HAWORTHIA, Duval. (1029).
560. stenophylla *Baker.*
561. subspicata *Baker.*
562. tenuifolia *Engl.*

165. AGAPANTHUS, L'Hérit. (1046).
563. umbellatus *L'Hérit.*
b. minor (*Lodd.*) *Baker.*

166. TULBAGHIA, Linn. (1047).
564. acutiloba *Harv.*
565. alliacea *Linn.*
566. davyana *Engl.*
567. leucantha *Baker.*

167. ALBUCA, Linn. (1079).
568. Adlami *Baker.*
569. Allenae *Baker.*
570. glauca *Baker.*
571. granulata *Baker.*
572. pachychlamys *Baker.*
573. polytricha *Baker.*
574. Shawii *Baker.*
575. tenuifolia *Baker.*
576. trichophylla *Baker.*

168. URGINEA, Steinh. (1080).
577. altissima *Baker.*
578. Burkei *Baker.*
579. capitata *Baker.*
580. depressa *Baker.*
581. kniphofioides *Baker.*
582. multisetosa *Baker.*
583. pretoriensis *Baker.*
584. pusilla *Baker.*
585. stenostachys *Baker.*

169. GALTONIA, Dcsne. (1081).
586. candicans *Dcsne.*

170. DRIMIA, Jacq. (1082).
587. capitata *Baker.*
588. chlorantha *Baker.*
589. haworthioides *Baker.*
590. media *Jacq.*
591. sphærocephala *Baker.*

32. LILIACEÆ—*cont.*

171. DIPCADI, Medik. (1084).
592. ciliare *Baker.*
593. Conrathii *Baker.*
594. elatum *Baker.*
595. gracillimum *Baker.*
596. hyacinthoides *Baker.*
597. Marlothii *Engl.*
598. oligotrichum *Baker.*
599. palustre *Baker.*
600. polyphyllum *Baker.*
601. rigidifolium *Baker.*
602. umbonatum *Baker.*
603. viride *Moench.*

172. LITANTHUS, Harv. (1085).
604. pusillus *Harv.*

173. SCILLA, Linn. (1086).
605. aggregata *Baker.*
606. Conrathii *Baker.*
607. cylindrobotrya *Diels.*
608. diphylla *Baker.*
609. Fehri *Baker.*
610. Galpinii *Baker.*
611. Gerrardii *Baker.*
612. graminifolia *Baker.*
613. inandensis *Baker.*
614. lanceæfolia *Baker.*
615. leptophylla *Baker.*
616. marginata *Baker.*
617. megaphylla *Baker.*
618. minima *Baker.*
619. natalensis *Planch.*
620. Nelsoni *Baker.*
621. ovatifolia *Baker.*
622. polyantha *Baker.*
a. angustifolia *Baker.*
623. rigidifolia *Kunth.*
b. Gerrardi *Baker.*
c. nervosa *Baker.*
624. Sandersoni *Baker.*
625. saturata *Baker.*
626. tristachya *Baker.*

174. EUCOMIS, L'Hérit. (1088).
627. regia *Ait.*
628. undulata *Ait.*

175. ORNITHOGALUM, (Tourn.) Linn. (1089).
629. (albovirens *Baker.* ?)
630. Ecklonii *Schltr.*
631. inconspicuum *Baker.*
632. monophyllum *Baker.*
633. pretoriense *Baker.*
634. Saltmarshei *Baker.*
635. Saundersiæ *Baker.*
636. Zeyheri *Baker.*

176. DRIMIOPSIS, Lindl. (1090).
637. Burkei *Baker.*

177. DRACÆNA, Linn. (1109).
638. latifolia *Regel.*
639. transvaalensis *Baker.*

32. LILIACEÆ—*cont.*

178. Sansevieria, Thunb. (1110).
640. æthiopica *Thunb.*
641. cylindrica *Bojer.*
642. grandis *Hook. f.*
643. guineensis *Willd.*
644. sulcata *Bojer.*
645. thyrsiflora *Thunb.*
646. zeylanica *Willd.*

179. Asparagus, (Tourn.) Linn. (1113).
647. africanus *Lam.*
648. asiaticus *Linn.*
649. Burkei *Baker.*
650. consanguineus *Baker.*
651. Cooperi *Baker.*
652. declinatus *Linn.*
653. decorticans *Schltr.*
654. medeoloides *Thunb.*
655. plumosus *Baker.*
656. Saundersiæ *Baker.*
657. Sprengeri *Regel.*
658. stipulaceus *Lam.*
659. virgatus *Baker.*

180. Behnia, Didrich. (1147).
660. reticulata *Didr.*

181. Smilax, (Tourn.) Linn. (1151).
661. kraussiana *Meisn.*

33. AMARYLLIDACEÆ, Lindl. (40).

182. Hessea, Herb. (1166).
662. Rehmanni *Baker.*

183. Hæmanthus, (Tourn.) Linn. (1167)
663. albiflos *Jacq.*
664. amarylloides *Jacq.*
665. hirsutus *Baker.*
666. Katharinæ *Baker.*
667. magnificus *Herb.*
668. multiflorus *Martin.*
669. Nelsoni *Baker.*
670. puniceus *Linn.*

184. Buphane, Herb. (1168).
671. toxicaria *Thunb.*

185. Clivia, Lindl. (1170).
672. Gardeni *Hook.*
673. miniata (*Hook.*) *Regel.*
674. nobilis *Lindl.*

186. Nerine, Herb. (1175).
675. angustifolia *Baker.*
676. flexuosa *Herb.*
a. Sandersoni *Baker.*
677. lucida *Herb.*

187. Brunsvigia, Heist. (1177).
678. Cooperi *Baker.*
679. Josephinæ *Ker.*

188. Anoiganthus, Baker. (1179).
680. breviflorus *Baker.*
b. minor *Baker.*

33. AMARYLLIDACEÆ—*cont.*

189. Apodolirion, Baker. (1187).
681. Ettæ *Baker.*

190. Crinum, Linn. (1189).
682. longifolium *Thunb.*

191. Ammocharis, Herb. (1190).
683. coccinea *Pax.*

192. Cyrtanthus, Ait. (1191).
684. angustifolius *Ait.*
685. Galpini *Baker.*
686. lutescens *Herb.*
687. parviflorus *Baker.*
688. (sanguineus *Hook.* ?)
689. Thorncroftii *C. H. Wrt.*

193. Agave, Linn. (1219).*
690. *americana* Linn.

194. Curculigo, Gærtn. (1229).
691. plicata *Ait.*
a. Barberi *Baker.*

195. Hypoxis, Linn. (1230).
692. acuminata *Baker.*
693. angustifolia *Lam.*
694. argentea *Harv.*
b. flaccida *Baker.*
c. sericea *Baker.*
695. cæspitosa *Baker.*
696. costata *Baker.*
697. filiformis *Baker.*
698. Galpini *Baker.*
699. Gerrardi *Baker.*
700. kraussiana *Buch.*
701. longifolia *Baker.*
702. longipes *Baker.*
703. membranacea *Baker.*
704. multiceps *Buch.*
705. obtusa *Burch.*
706. parvifolia *Baker.*
707. rigidula *Baker.*
b. pilosissima *Baker.*
708. Rooperi *Moore.*
709. villosa *Linn.*
a. obliqua *Jacq.*

196. Walleria, J. Kirk. (1231).
710. nutans *Kirk.*

34. VELLOZIACEÆ, Drude. (41).

197. Barbacenia, Vand. (1247).
(= Vellozia, Fl. Cap.)
711. hereroensis *Schinz.*
712. humilis (*Baker*) *Pax.*
713. retinervis (*Baker*) *Pax.*
714. rosea (*Baker*) *Pax.*
715. Schlechteri (*Baker*) *Pax.*
716. villosa (*Baker, Pax.*
717. violacea (*Baker*) *Pax.*
718. viscosa (*Baker*) *Pax.*

35. DIOSCOREACEÆ, Lindl. (43).

198. DIOSCOREA, Plum. (1252).

719. crinita *Hook. f.*
720. Elephantipes *Spreng.*
721. malifolia *Baker.*
722. Rehmanni *Baker.*
723. retusa *Mast.*
724. sylvatica *Eckl.*
725. Tysoni *Baker.*

36. IRIDACEÆ, Lindl. (44).

199. MORÆA, (Mill.) Linn. (1265).

726. (Burchellii *Baker.* ?)
727. edulis *Ker.*
728. Elliotii *Baker.*
729. iridioides *Linn.*
    b. prolongata *Baker.*
730. glaucopsis *Drap.*
731. polyanthos *Thunb.*
732. simulans *Baker.*
733. spathacea *Ker.*
    b. Galpini *Baker.*
    c. natalensis *Baker.*
734. stricta *Baker.*
735. tricuspis *Ker.*
736. [tripetala (*Linn.*) *Ker.* ?]

200. HOMERIA, Vent. (1277).

737. pallida *Baker.*

201. ARISTEA, Soland. (1295).

738. anceps *Eckl.*
739. compressa *Buch.*
740. majubensis *Baker.*
741. schizolæna *Harv.*
742. dichotoma *Ker.*
743. torulosa *Klatt.*

202. SCHIZOSTYLIS, Backh. & Harv. (1299)

744. coccinea *Backh. & Harv.*
745. pauciflora *Klatt.*

203. GEISSORRHIZA, Ker. (1300).

746. macra *Baker.*
747. Schlechteri *Baker.*

204. HESPERANTHA, Ker. (1301).

748. Baurii *Baker.*
749. longicollis *Baker.*

205. DIERAMA, C. Koch. (1303).

750. pendula *Baker.*
    b. pumila *Baker.*
751. pulcherrima *Baker.*

206. TRITONIA, Ker. (1306).

752. aurea *Pappe.*
753. graminifolia *Baker.*
754. Nelsoni *Baker.*
755. petrophila *Baker.*
756. Pottsii *Benth.*
757. rosea *Klatt.*
758. securigera *Ker.*

36. IRIDACEÆ—*cont.*

207. ACIDANTHERA, Hochst. (1308).

759. brevicaulis *Baker.*
760. platypetala *Baker.*

208. BABIANA, Ker. (1310).

761. Bainesii *Baker.*
762. Schlechteri *Baker.*

209. GLADIOLUS, (Tourn.) Linn. (1311).

763. Adlami *Baker.*
764. blandus *Ait.*
765. Conrathii *Baker.*
766. crassifolius *Baker.*
767. cymbarius *Baker.*
768. densiflorus *Baker.*
769. Eckloni *Lehm.*
770. edulis *Burch.*
771. Elliotii *Baker.*
772. inconspicuus *Baker.*
773. Leichtlini *Baker.*
774. Ludwigii *Pappe.*
    a. calvatus *Baker.*
775. micranthus *Baker.*
776. Oatesii *Rolfe.*
777. ochroleucus *Baker.*
778. paludosus *Baker.*
779. Papilio *Hook. f.*
780. permeabilis *Delar.*
781. psittacinus *Hook.*
    b. Cooperi *Baker.*
782. Rehmanni *Baker.*
783. remotifolius *Baker.*
784. rigidifolius *Baker.*
785. Schlechteri *Baker.*
786. spathulatus *Baker.*
787. spectabilis *Baker.*
788. sulphureus *Hook. f.* (*non Jacq.*)
789. trichostachys *Baker.*
790. Woodii *Baker.*

210. ANTHOLYZA, Linn. (1312).

791. laxiflora *Baker.*
792. paniculata *Klatt.*
793. Schlechteri *Baker.*

211. LAPEYROUSIA, Pourr. (1314).

794. Bainesii *Baker.*
795. cruenta *Baker.*
796. galaxioides *Baker.*
797. grandiflora *Baker.*
798. leptostachya *Baker.*
799. Sandersoni *Baker.*

212. WATSONIA, Mill. (1315).

800. densiflora *Baker.*
801. rosea *Ker.*
802. Meriana *Mill.*
    a. rosea-alba *Ker.*
803. flavida *Bolus.*
804. transvaalensis *Baker.*

37. MUSACEÆ, J. St. Hil. (45).

213. MUSA, Linn. (1318).

805. (ventricosa *Welw.* ?)

37. MUSACEÆ—*cont.*

214. Strelitzia, Banks. (1319).
  806. augusta *Thunb.*

38. ZINGIBERACEÆ, L. C. Rich. (46)

215. Kæmpferia, Linn. (1346).
  807. æthiopica *Benth.*
  808. (rosea *Schweinf.* ?)

216. Siphonochilus, Wood & Franks (——)
  809. (natalensis *Wood & Franks.*)

39. ORCHIDACEÆ, Lindl. (50).

217. Stenoglottis, Lindl. (1407).
  810. fimbriata *Lindl.*

218. Holothrix, L. C. Rich. (1408).
  811. Culveri *Bolus.*
    b. integra *Bolus.*
  812. micrantha *Schltr.*
  813. orthoceras *Reichb. f.*
  814. Scopularia *Reichb. f.*

219. Platanthera, L. C. Rich. (1410).
  815. Brachycorythis *Schltr.*
  816. ovata (*Lindl.*) *Schltr.*
  817. tenuior (*Reichb. f.*) *Schltr.*
  818. Zeyheri (*Sond.*) *Schltr.*

220. Habenaria, Willd. (1422).
  819. anguiceps *Bolus.*
  820. arenaria *Lindl.*
  821. Bonatea *Reichb. f.*
  822. clavata *Reichb. f.*
  823. cornuta *Lindl.*
  824. Culveri *Schltr.*
  825. dives *Reichb.*
  826. dregeana *Lindl.*
    b. Tysoni *Bolus.*
  827. insignis *Schltr.*
  828. kranzliniana *Schltr.*
  829. lævigata *Lindl.*
  830. malacophylla *Reichb. f.*
  831. microrhynchos *Schltr.*
  832. natalensis *Reichb. f.*
  833. occultans *Welw.*
  834. polyphylla *Kranzl.*
  835. Schlechteri *Kranzl.*
  836. stenorhynchos *Schltr.*
  837. tetrapetala *Reichb. f.*
    b. major *Schltr.*
  838. tetrapetaloides *Kranzl.*
  839. trachychila *Kranzl.*
  840. transvaalensis *Schltr.*
  841. tridens *Lindl.*

221. Neobolusia, Schltr. (1429).
  842. Tysoni *Schltr.*

39. ORCHIDACEÆ—*cont.*

222. Satyrium, Linn. (1430).
  843. aphyllum *Schltr.*
  844. cristatum *Sond.*
  845. longicauda *Lindl.*
  846. neglectum *Schltr.*
  847. ocellatum *Bolus.*
  848. paludicolum *Schltr.*
  849. parviflorum *Swartz.*
  850. trinerve *Lindl.*

223. Schizochilus, Sond. (1431).
  851. Bulbinella *Bolus.*
  852. Zeyheri *Sond.*

224. Brownleea, Harv. (1433).
  853. cærulea *Harv.*
  854. Galpini *Bolus.*
  855. parviflora *Harv.*

225. Disa, Berg. (1434).
  856. aconitoides *Sond.*
  857. Baurii *Bolus.*
  858. brevicornis *Bolus.*
  859. cephalotes *Reichb. f.*
  860. chrysostachya *Swartz.*
  861. Cooperi *Reichb. f.*
  862. Culveri *Schltr.*
  863. extenctoria *Reichb. f.*
  864 fragrans *Schltr.*
  865. MacOwani *Reichb. f.*
  866. nervosa *Lindl.*
  867. oreophila *Bolus.*
  868. patula *Sond.*
  869. polygonoides *Lindl.*
  870. rodantha *Schltr.*
  871. saxicola *Schltr.*
  872. stachyoides *Reichb. f.*
  873. versicolor *Reichb. f.*

226. Disperis, Swartz. (1437).
  874. anthoceros *Reichb. f.*
  875. concinna *Schltr.*
  876. Fanniniæ *Harv.*
  877. gracilis *Schltr.*
  878. Kersteni *Reichb. f.*
  879. lindleyana *Reichb. f.*
  880. micrantha *Lindl.*
  881. Thorncrofti *Schltr.*
  882. Tysonii *Bolus.*
  883. virginalis *Schltr.*

227. Pterygodium, Swartz. (1438).
  884. hastatum *Bolus.*
  885. magnum *Reichb. f.*

228. Corycium, Swartz. (1440).
  886. nigrescens *Sond.*

229. Pogonia, Juss. (1464).
  887. purpurata *Reichb. f.*

230. Liparis, L. C. Rich. (1556).
  888. Bowkeri *Harv.*

39. ORCHIDACEÆ—*cont.*

231. POLYSTACHYA, Hook. (1565).
889. glaberrima *Schltr.*
890. ottoniana *Reichb. f.*
891. pubescens *Reichb. f.*
892. transvaalensis *Schltr.*

232. ANSELLIA, Lindl. (1568).
893. africana *Lindl.*

233. EULOPHIA, R. Br. (1648).
894. æmula *Schltr.*
895. æqualis (*Lindl.*) *Bolus.*
896. bilamellata *Schltr.*
897. Buchanani *Bolus.*
898. caffra *Reichb. f.*
899. capensis (*Linn.*) *Bolus.*
900. chlorantha *Schltr.*
901. chrysantha *Schltr.*
902. clitellifer *Bolus.*
903. circinnata *Rolfe.*
904. corallorrhiziformis *Schltr.*
905. dregeana *Lindl.*
906. Engleri *Rolfe.*
907. ensata *Lindl.*
908. fragrans *Schltr.*
909. Galpini *Schltr.*
910. hians *Spreng.*
911. inæqualis *Schltr.*
912. Krebsii *Bolus.*
913. laxiflora *Schltr.*
914. leontoglossa *Reichb. f.*
915. nigricans *Schltr.*
916. oliveriana (*Reichb. f.*) *Bolus.*
917. parvilabris *Lindl.*
918. reichenbachiana *Bolus.*
919. speciosa (*R. Br.*) *Bolus.*
  b. Culveri *Schltr.*
920. streptopetala *Lindl.*
921. transvaalensis *Rolfe.*
922. tuberculata *Bolus.*
923. vaginata *Ridl.*
924. Zeyheri *Hook. f.*

234. BULBOPHYLLUM, Thou. (1705).
925. Sandersoni *Reichb. f.*

235. ANGRÆCUM, Bory. (1828).
926. arcuatum *Lindl.*
927. conchiferum *Lindl.*
928. pusillum *Lindl.*
929. sacciferum *Lindl.*
930. tricuspe *Bolus.*

236. LISTROSTACHYS, Reichb. (1835).
931. arcuata (*Lindl.*) *Reichb.*

237. MYSTACIDIUM, Lindl. (1837).
932. gracile *Harv.*

40. PIPERACEÆ, L. C. Rich. (53).

238. PIPER, Linn. (1862).
933. capense *Linn.*

40. PIPERACEÆ—*cont.*

239. PEPEROMIA, Ruiz. & Pav. (1866).
934. reflexa *A. Dietr.*
935. retusa *A. Dietr.*

41. SALICACEÆ, Lindl. (56).

240. POPULUS, Linn. (1872).*
936. *canescens* Smith.

241. SALIX, (Tourn.) Linn. (1873).
937. *babylonica* Linn.
938. capensis *Thunb.*
939. Wilmsii *Seem.*

42. MYRICACEÆ, Lindl. (57).

242. MYRICA, Linn. (1874).
940. æthiopica *Linn.*

43. ULMACEÆ, Mirb. (63).

243. CELTIS, (Tourn.) Linn. (1898).
941. rhamnifolia *Presl.*

244. TREMA, Lour. (1902).
942. bracteolata *Blume.*

44. MORACEÆ, Lindl. (64).

245. MACLURA, Nutt. (1918).*
943. *aurantiaca* Nutt.

246. FICUS, (Tourn.) Linn. (1961).
944. (antithetophylla *Steud.* ?)
945. Burkei *Miq.*
946. capensis *Thunb.*
947. damarensis *Engl.*
948. Dinteri *Warb.*
949. Galpinii *Warb.*
950. howardiana *Sim.*
951. lutea *Vahl.*
952. (natalensis *Hochst.* ?)
953. Pretoriæ *Burtt-Davy.*
954. schinziana *Warb.*
955. Soldanella *Warb.*
956. Sonderi *Miq.*
  b. ovalifolia (*Warb.*) *Burtt-Davy.*
  c. villosa (*Warb.*) *Burtt-Davy.*

247. CANNABIS, (Tourn.) Linn. (1973).*
957. *sativa* Linn.

45. URTICACEÆ, Engl. (65).

248. URTICA, Linn. (1974).*
958. *urens* Linn.

249. URERA, Gaud. (1978).
959. tenax *N. E. Br.*

45. URTICACEÆ—*cont.*

250. FLEURYA, Gaud. (1982).
960. capensis *Wedd.*
961. peduncularis *Wedd.*

251. POUZOLSZIA, Gaud. (1992).
962. hypoleuca *Wedd.*

46. PROTEACEÆ, J. St. Hil. (66).

252. FAUREA, Harv. (2034).
963. Galpinii *Phill.*
964. saligna *Harv.*
965. speciosa *Welw.*

253. PROTEA, Linn. (2035).
966. abyssinica *Willd.*
967. Bolusii *Phill.*
968. caffra *Meisn.*
969. curvata *N. E. Br.*
970. hirta *Klotzsch.*
971. rhodantha *Hook. f.*
972. Rouppelliæ *Meisn.*
973. simplex *Phill.*
974. transvaalensis *Phill.*
975. trigona *Phill.*

254. LEUCOSPERMUM, R. Br. (2036).
976. attenuatum *R. Br.*

47. LORANTHACEÆ, D. Don. (67).

255. LORANTHUS, Linn. (2074).
977. Dregei *E. & Z.*
978. glabriflorus *Conrath.*
979. kraussianus *Meisn.*
980. namaquansis *Harv.*
981. natalitius *Meisn.*
982. rubromarginatus *Engl.*
983. Zeyheri *Harv.*

256. VISCUM, (Tourn.) Linn. (2093).
984. dichotomum *Don.*
985. obovatum *Harv.*
986. rotundifolium *Thunb.*
987. subserratum *Schltr.*
988. verrucosum *Harv.*

48. SANTALACEÆ, R. Br. (69).

257. OSYRIS, Linn. (2108).
989. abyssinica *Hochst.*

258. OSYRIDICARPUS, A. DC. (2116).
990. natalensis *A. DC.*

259. THESIUM, Linn. (2118).
991. (angulosum *A. DC.* ?)
992. pallidum *A. DC.*
993. racemosum *Bernh.*
994. transvaalensis *Schltr.*
995. virens *E. Mey.*

49. OLACACEÆ, Lindl. (72).

260. XIMENIA, (Plum.) Linn. (2136).
996. americana *Linn.*

50. BALANOPHORACEÆ, Lindl. (73).

261. SARCOPHYTE, Sparm. (2158).
997. sanguinea *Sparm.*

51. ARISTOLOCHIACEÆ, Blume. (74).

262. ARISTOLOCHIA, Linn. (2174).
998. petersiana *Klotzsch.*

52. POLYGONACEÆ, Lindl. (77).

263. EMEX, Neck. (2194).*
999. *australis* Steinh.

264. RUMEX, Linn. (2195).
1000. *Acetosella* Linn.
1001. *crispus* Linn.
1002. ecklonianus *Meisn.*
1003. Hydrolapathum *Huds.*
1004. nepalensis *Spreng.*
1005. sagittatus *Thunb.*
1006. *sanguineus* Linn.
1007. Woodii *N. E. Br.*

265. POLYGONUM, (Tourn.) Linn. (2201).
1008. alatum *Buch-Ham.*
1009. *amphibium* Linn.
1010. *aviculare* Linn.
b. *erectum* (Linn.) Roth.
1011. *Convolvulus* Linn.
1012. (lanigerum *R. Br.* ?)
1013. lapathifolium *Linn.*
a. maculatum *Dyer & Trim.*
1014. Sub-sp. A. verum *Schust.*
a. normale *Schust.*
b. nodosum *Schust.*
1015. Sub-sp. B. punctatum *Schust.*
a. genuinum *Schust.*
b. truncatum *Schust.*
1016. meisnerianum *Ch. & Schl.*
1017. serrulatum *Lag.*
1018. tomentosum *Willd.*
b. denudatum *Schust.*
c. strigillosum *Schust.*
1019. pedunculare *Wall.*

266. OXYGONUM, Burch. (2204).
1020. alatum *Burch.*
1021. atriplicifolium *Martelli.*
a. sinuatum *Baker.*
1022. calcaratum *Burch.*
1023. canescens *Sond.*
1024. dregeanum *Meisn.*
1025. Zeyheri *Sond.*

53. CHENOPODIACEÆ, Less. (78).

267. Chenopodium, (Tourn.) Linn. (2223).*

1026. *album* Linn.
1027. *ambrosioides* Linn.
1028. *Botrys* Linn.
1029. *foetidum* Schrad.
 b. *pseudomultiflorum* J. Murr.
1030. *murale* Linn.
1031. *polyspermum* Linn.
1032. *vulvaria* Linn.

268. Roubieva, Moq. (—).*

1033. *multifida* Moq.

269. Salsola, Linn. (2269).

1034. aphylla *Linn. f.*

54. AMARANTACEÆ, Juss. (79).

270. Celosia, Linn. (2292).

1035. *cristata* Linn.
1036. trigyna *Linn.*

271. Hermbstaedtia, Reichb. (2293).

1037. elegans *Moq.*
1038. rubromarginata *C. H. Wght.*
1039. transvaalensis *Lopr.*

272. Amarantus, Linn. (2299).

1040. *paniculatus* Linn.
1041. *spinosus* Linn.
1042. Thunbergii *Moq.*

273. Sericocoma, Fenzl. (2305).

1043. avolans *Fenzl.*

274. Sericorema, Lopr. (2307).

1044. remotiflora (*Moq.*) *Lopr.*

275. Cyphocarpa, Lopr. (2309).

1045. angustifolia (*Moq.*) *Lopr.*
1046. resedoides *Lopr.*
1047. Wilmsii *Lopr.*

276. Centema, Hook f. (2311).

1048. cruciata *Schinz.*

277. Cyathula, Lour. (2312).

1049. crispa *Schinz.*
1050. cylindrica *Moq.*
1051. globulifera (*Bojer*) *Moq.*

278. Pupalia, Juss. (2314).

1052. lappacea (*Linn.*) *Juss.*

279. Aerva, Forsk. (2317).

1053. lanata (*Linn.*) *Juss.*
1054. leucura *Moq.*

280. Achyranthes, Linn. (2328).

1055. aspera *Linn.*
1056. robusta *C. H. Wght.*

54. AMARANTACEÆ—*cont.*

281. Achyropsis, Hook. f. (2328).

1057. leptostachya *Hook. f.*

282. Alternanthera, Forsk. (2335).*

1058. *Achyrantha* R. Br.
1059. *sessilis* R. Br.

283. Gomphrena, Linn. (2338).*

1060. *globosa* Linn.

55. NYCTAGINACEÆ, Lindl. (80).

284. Mirabilis, (Rivin.) Linn. (2347).*

1061. *Jalapa* Linn.

285. Boerhaavia, Vaill. (2349).

1062. bracteata *T. Cooke.*
1063. pentandra *Burch.*
1064. plumbaginea *Cav.*
 a. trichocarpa *Heimerl.*
1065. repens *Linn.*
 a. diffusa *Hook. f.*
1066. Schinzii *Heimerl.*
 b. villosa *Heimerl.*

56. PHYTOLACCACEÆ, Lindl. (83).

286. Microtea, Swartz. (2372).

1067. Burchellii *N. E. Br.*
1068. gracilis *A. W. Hil.*
1069. tenuissima *N. E. Br.*

287. Limeum, Linn. (2376).

1070. æthiopicum *Burm.*
1071. fenestratum (*Fenzl.*) *Heimerl.*
1072. linifolium *Fenzl.*
1073. viscosum *Fenzl.*
 b. longepedunculatum *Schinz.*

288. Psammotropha, E. & Z. (2379).

1074. myriantha *Sond.*

289. Phytolacca, (Tourn.) Linn. (2380).

1075. *americana* Linn.
1076. *dioica* Linn.
1077. heptandra *Retz.*

290. Giesekia, Linn. (2382).

1078. pharnaceoides *Linn.*

57. PORTULACACEÆ, Reichb. (85).

291. Talinum, Adans. (2406).

1079. caffrum *E. & Z.*
 b. minus *E. & Z.*

292. Portulacaria, Jacq. (2419).

1080. afra *Jacq.*

293. Portulaca, Linn. (2421).

1081. *oleracea* Linn.
1082. pilosa *Linn.*
1083. quadrifida *Linn.*

57. PORTULACACEÆ—*cont.*

294. Anacampseros, Sims. (3161).
    1084. filamentosa *Sims.*

58. AIZOACEÆ, A. Br. (84).

295. Mollugo, Linn. (2387).
    1085. cerviana *Ser.*
        a. linearis (*Fenzl.*) *Sond.*

296. Glinus, Loefl. (2388).
    1086. lotoides *Linn.*

297. Pharnaceum, Linn. (2389).
    1087. dichotomum *Linn.*
    1088. verrucosum *E. & Z.*

298. Orygia, Forsk. (2393).
    1089. decumbens *Forsk.*

299. Mesembrianthemum, Dill. (2405).
    1090. acutangulum *Harv.*
    1091. acutipetalum *N. E. Br.*
    1092. *croceum* Jacq.
    1093. *crystallinum* Linn.
    1094. *floribundum* Haw.
    1095. incomptum *Haw.*
    1096. junceum *Haw.*
    1097. Lesliei *N. E. Br.*
    1098. Mahoni *N. E. Br.*
    1099. semidentatum *Salm-Dyck.*
    1100. spinosum *Linn.*
    1101. Sutherlandi *Hook. f.*
    1102. unidens *Haw.*
    1103. vittatum *N. E. Br.*

59. CARYOPHYLLACEÆ, Reichb. (87)

300. Stellaria, Linn. (2429).*
    1104. *media* Cyrill.

301. Cerastium, Dill. (2430).
    1105. capense *Sond.*

302. Spergula, Linn. (2449).*
    1106. *arvensis* Linn.

303. Polycarpæa, Lam. (2455).
    1107. corymbosa *Lam.*

304. Pollichia, Soland. (2467).
    1108. campestris *Ait.*

305. Corrigiola, Linn. (2469).
    1109. littoralis *Linn.*

306. Herniaria, (Tourn.) Linn. (2476).
    1110. hirsuta *Linn.*

307. Agrostemma, Linn. (2488).*
    1111. *Githago* Linn.

59. CARYOPHYLLACEÆ—*cont.*

308. Silene, Linn. (2490).
    1112. Burchellii *Oth.*
        a. angustifolia *Sond.*
        b. latifolia *Sond.*
    1113. capensis *Oth.*
    1113 .*gallica* Linn.
    1114. thunbergiana *E. & Z.*

309. Vaccaria, Medik. (2501).*
    1115. *vulgaris* Host.

310. Dianthus, Linn. (2502).
    1116. crenatus *Thunb.*
    1117. pectinatus *E. Mey.*
    1118. prostratus *Hochst.*
    1119. scaber *Thunb.*
        b. graminifolia *Fenzl.*
    1120. Zeyheri *Sond.*

60. NYMPHÆACEÆ, DC. (88).

311. Nymphæa, (Tourn.) Linn. (2513).
    1121. capensis *Thunb.*
        b. maculata *Caspary.*

61. RANUNCULACEÆ, Juss. (91).

312. Anemone, Linn. (2541).
    1122. canescens (*Szysz.*) *Prantl.*
    1123. Knowltonia *Burtt-Davy.*
    1124. transvaalensis (*Szysz.*) *Prantl.*

313. Clematis, Dill. (2542).
    1125. brachiata *Thunb.*
    1126. inciso-dentata *A. Rich.*
    1127. massoniana *DC.*
    1128. orientalis *Linn.*
    1129. Stanleyi *Hook.*
    1130. Thunbergii *Steud.*

314. Ranunculus, (Tourn.) Linn. (2546).
    1131. aquatilis *Linn.*
    1132 Cooperi *Oliv.*
    1133. Drouetii *Godr.*
    1134. Meyeri *Harv.*
        b. transvaalensis *Szysz.*
    1135. pinnatus *Poir.*
    1136. pubescens *Thunb.*

315. Thalictrum, (Tourn.) Linn. (2548).
    1137. rhyncocarpum *Dill. & Rich.*

62. MENISPERMACEÆ, DC. (94).

316. Stephania, Lour. (2572).
    1138. hernandifolia *Walp.*

317. Antizoma, Miers. (2573).
    1139. harveyana *Miers.*

62.—MENISPERMACEÆ—*cont.*

318. Cissampelos, Linn. (2674).
1140. calcarifera *Miers.*
1141. harveyana *Miers.*
1142. Pareira *Linn.*
1143. torulosa *E. Mey.*

63. ANONACEÆ, L. C. Rich. (98).

319. Anona, Linn. (2729).
1144. senegalensis *Pers.*

64. MONIMIACEÆ, Dumort. (101).

320. Xymalos, Baill. (2759a).
1145. monospora (*Harv.*) *Baill.*

65. LAURACEÆ, Lindl. (102).

321. Ocotea, Aubl. (2788).
1146. bullata *E. Mey.*

322. Cryptocarya, R. Br. (2813).
1147. (liebertiana *Engl.* ?)

66. PAPAVERACEÆ, B. Juss. (104).

323. Fumaria, Linn. (2661).*
1148. *officinalis* Linn.
a. *capensis* Linn.

324. Argemone, (Tourn.) Linn. (2852).*
1149. *mexicana* Linn.
a. *ochroleuca* Lindl.

325. Papaver, (Tourn.) Linn. (2853).
1150. aculeatum *Thunb.*
1151. *hispidum* Lam.
1152. *hybridum* Linn.

326. Corydalis, Vent. (2858).*
1153. *aurea* Willd.

67. CRUCIFERÆ, B. Juss. (105).

327. Heliophila, Burm. f. (2875).
1154. pusilla *Linn.*
1155. rigidiuscula *Sond.*

328. Lepidium, Linn. (2883).
1156. africanum (*Burm.*) *DC.*
a. capense (*Thunb.*) *Thell.*
1157. divaricatum *Soland.*
1158. Schinzii *Thell.*

329. Coronopus, Rupp. (2884).*
1159. *didymus* (Linn.) Smith.

330. Sisymbrium, (Tourn.) Linn. (2917).
1160. capense *Thunb.*
1161. exasperatum *Sond.*

67. CRUCIFERÆ—*cont.*

331. Eruca, Adans. (2944).*
1162. *sativa* Mill.

332. Brassica, (Tourn.) Linn. (2949).
1163. *campestris* Linn.
1164. *nigra* Koch.
1165. strigosa *DC.*
b. glabrata *Sond.*

333. Raphanus, (Tourn.) Linn. (2950).*
1166. *raphanistrum* Linn.

334. Barbarea, R. Br. (2961).*
1167. *præcox* R. Br.

335. Nasturtium, Linn. (2965).*
1168. *officinale* R. Br.
1169. *indicum* DC.
a. *integrifolium* DC.

336. Cardamine, (Tourn.) Linn. (2966).
1170. africana *Linn.*

337. Capsella, Medik. (2986).*
1171. *Bursa-pastoris* Moench.

68. CAPPARIDACEÆ, Lindl. (107).

338. Cleome, Linn. (3082).
1172. diandra *Burch.*
1173. hirta *Oliv.*
1174. maculata *Sond.*
1175. monophylla *Linn.*
b. cordata *Sond.*
1176. rubella *Burch.*
1177. rupestris *Sond.*

339. Gynandropsis, DC. (3087).
1178. pentaphylla *DC.*

340. Polanisia, Raf. (3090).
1179. dianthera *DC.*
1180. maculata *Sond.*
1181. triphylla *Conrath.*

341. Capparis, (Tourn.) Linn. (3101).
1182. albitrunca *Burch.*
1183. corymbifera *E. Mey.*

342. Boscia, Lam. (3106).
1184. (Pechuelii *Ktze.* ?)
1185. rehmanniana *Pest.*
1186. transvaalensis *Pest.*

343. Cadaba, Forsk. (3109).
1187. juncea (*Linn.*) *B. & H.*

344. Mærua, Forsk. (3112).
1188. angolensis *DC.*
1189. caffra (*Burch.*) *Pax.*
1190. emarginata *Schinz.*
1191. nervosa (*Hochst.*) *Oliv.*
1192. pedunculosa (*Hochst.*) *Sim.*
1193. rigida *R. Br.*
1194. rosmarinoides (*Sond.*) *Hochst.*

69. RESEDACEÆ, DC. (108).

345. Oligomeris, Cambess. (3126).
1195. dregeana *Presl.*

70. DROSERACEÆ, DC. (112).

346. Drosera, Linn. (3136).
1196. burkeana *Planch.*
1197. madagascariensis *DC.*
1198. ramentacea *Burch.*

71. CRASSULACEÆ, DC. (115).

347. Cotyledon, (Tourn.) Linn. (3164).
1199. coruscans *Harv.*
1200. orbiculata *Linn.*

348. Bryophyllum, Salisb. (3165).
1201. calycinum *Salisb.*

349. Kalanchoe, Adans. (3166).
1202. longiflora *Schltr.*
1203. paniculata *Harv.*
1204. Pentheri *Schltr.*
1205. rotundifolia *Harv.*
1206. thyrsiflora *Harv.*

350. Crassula, Dill. (3168).
1207. acinaciformis *Schinz.*
1208. argyrophylla *Diels.*
1209. atrosanguinea *Beauv.*
1210. campestris *E. & Z.*
1211. centauroides *Linn.*
1212. compacta *Schönl.*
1213. enantiophylla *E. G. Bak.*
1214. expansa *Ait.*
1215. inanis *Thunb.*
1216. muscosa *Linn.*
1217. nodulosa *Schönl.*
1218. parvisepala *Schönl.*
1219. perfoliata *Linn.*
1220. rubicunda *E. Mey.*
1221. sarcocaulis *E. & Z.*
1222. setulosa *Harv.*
1223. similis *E. G. Bak.*
1224. stachyera *E. & Z.*
  b. pulchella *Harv.*
1225. subulata *Hook.*
1226. swaziensis *Schönl.*
1227. vaginata *E. & Z.*

72. SAXIFRAGACEÆ, DC. (117).

351. Heuchera, Linn. (3195).*
1228. *Hallii* A. Gray.

352. Vahlia, Thunb. (3201).
1229. capensis *Thunb.*
  b. linearis *E. Mey.*

353. Choristylis, Harv. (3241).
1230. rhamnoides *Harv.*

73. PITTOSPORACEÆ, Lindl. (118).

354. Pittosporum, Banks. (3252).
1231. Kruegeri *Engl.*
1232. viridiflorum *Sims.*

74. MYROTHAMNACEÆ, Nied. (121)

355. Myrothamnus, Welw. (3282).
1233. flabellifolia *Welw.*

75. HAMAMELIDACEÆ, Lindl. (123).

356. Trichocladus, Pers. (3311).
1234. grandiflorus *Oliver.*

76. ROSACEÆ, B. Juss. (126).

357. Rubus, (Tourn.) Linn. (3353).
1235. Ludwigii *E. & Z.*
1236. pinnatus *Willd.*
1237. *rosæfolius* Linn.

358. Potentilla, Linn. (3356).
1238. *fissa* Nutt.
1239. *fruticosa* Linn.
1240. supina *Linn.*

359. Alchemilla, Linn. (3375).
1241. capensis *Thunb.*

360. Agrimonia, (Tourn.) Linn. (3376).
1242. Eupatoria *Linn.*
  a. capensis *Harv.*

361. Leucosidea, E. & Z. (3379).
1243. sericea *E. & Z.*

362. Cliffortia, Linn. (3388).
1244. linearifolia *E. & Z.*
1245. serrulata *Engl. & Diels.*

363. Grielum, Linn. (3391).
1246. cuneifolium *Schinz.*

364. Pygeum, Gærtn. (3393).
1247. africanum *Hook. f.*

365. Prunus, (Tourn.) Linn. (3396).*
1248. *Persica* Stokes.

366. Parinarium, Aubl. (3405).
1249. capense *Harv.*
1250. Mobola *Oliver.*

77. LEGUMINOSÆ, Juss. (128).

367. Albizzia, Durazz. (3443).
1251. fastigiata *Oliver.*
1252. versicolor *Welw.*

77. LEGUMINOSÆ—*cont.*

368. Acacia, (Tourn.) Linn. (3446).
1253. albida *Delile.*
1254. arabica *Willd.*
a. kraussiana *Benth.*
1255. ataxacantha *DC.*
1256. Burkei *Benth.*
1257. caffra *Willd.*
1258. Catechu *Willd.*
1259. clavigera *E. Mey.*
1260. Davyi *N. E. Br.*
1261. *decurrens* Willd.
a. *normalis* Benth.
1262. delagoensis *Harms.*
1263. detinens *Burch.*
1264. eriadenia *Benth.*
1265. ferox *Benth.*
1266. Gerrardi *Benth.*
1267. giraffæ *Burch.*
1268. glandulifera *Schinz.*
1269. hebeclada *DC.*
1270. heteracantha *Benth.*
1271. horrida *Willd.*
b. transvaalensis *Burtt-Davy.*
1272. kwebensis *N. E. Br.*
1273. (lasiopetala *Oliver.* ?)
1274. *mollissima* Willd.
1275. natalitia *E. Mey.*
1276. pallens (*Benth*) *Rolfe.*
1277. rehmanniana *Schinz.*
1278. robusta *Burch.*
1279. Senegal *Willd.*
1280. spirocarpoides *Engl.*
1281. stolonifera *Burch.*
1282. subalata *Vatke.*
1283. uncinata *Engl.*
1284. xanthophlœa *Benth.*
1285. (zambesiaca *Schinz.* ?)

369. Mimosa, Linn. (3449).*
1286. *asperata* Linn.

370. Dichrostachys, W. & A. (3452).
1287. Forbesii *Benth.*
1288. nutans *Benth.*

371. Elephantorrhiza, Benth. (3467).
1289. Burchellii *Benth.*
1290. Burkei *Benth.*

372. Entada, Adans. (3468).
1291. natalensis *Benth.*

373. Burkea, Benth. (3474).
1292. africana *Hook.*

374. Copaifera, Linn. (3490).
1293. Mopane *Kirk.*

375. Schotia, Jacq. (3506).
1294. brachypetala *Sond.*
1295. transvaalensis *Rolfe.*

376. Afzelia, Smith (3509).
1296. quanzensis *Welw.*

77. LEGUMINOSÆ—*cont.*

377. Bauhinia, Linn. (3528).
1297. burkeana *Benth.*
1298. esculenta *Burch.*
1299. fassoglensis *Kotzschy.*
1300. Galpini *N. E. Br.*
1301. macrantha *Oliv.*
1302. reticulata *DC.*

378. Cassia, (Tourn.) Linn. (3536).
1303. abbreviata *Oliv.*
1304. absus *Linn.*
1305. arachoides *Burch.*
1306. delagoensis *Harv.*
1307. mimosoides *Linn.*
1308. obovata *Collad.*
1309. *occidentalis* Linn.

379. Pterolobium, R. Br. (3553).*
1310. *lacerans* R. Br.

380. Hoffmanseggia, Cav. (3557).
1311. Sandersoni (*Harv.*) *B. & H*

381. Cæsalpinia, Linn. (3559).*
1312. *Sepiaria* Roxb.

382. Peltophorum, Walp. (3561).
1313. africanum *Sond.*

383. Sophora, Linn. (3602).
1314. zambesiaca *Baker.*

384. Calpurnia, E. Mey. (3607).
1315. intrusa *E. Mey.*
1316. lasiogyne *E. Mey.*
1317. sylvatica *E. Mey.*

385. Bolusanthus, Harms. (3607A).
1318. speciosus (*Bolus*) *Harms.*

386. Cœlidium, Vog. (3646).
1319. muraltioides *Benth.*

387. Phænohoffmannia, Ktze. (3656).
1320. cajanifolia (*Harv.*) *O. Ktze.*
1321. holosericea *Schinz.*

388. Lotononis, E. & Z. (3657).
1322. acutissima *Schltr.*
1323. aristata *Schinz.*
1324. bracteata *Benth.*
1325. corymbosa *Benth.*
1326. eriantha *Benth.*
1327. filifolia *Bolus.*
1328. foliosa *Bolus.*
1329. Haygarthii *N. E. Br.*
1330. hirsuta *Schinz.*
1331. laxa *E. & Z.*
1332. macrosepala *Conrath.*
1333. marginata *Schinz.*
1334. microphylla *Harv.*
1335. mucronata *Conrath.*
1336. multiflora *Schinz.*

77. LEGUMINOSÆ—*cont.*

388. LOTONONIS—*cont.*

1337. orthorhiza *Conrath.*
1338. peduncularis *Benth.*
1339. prostrata *Benth.*
1340. Rogersii *Kensit.*
1341. sessilifolia *Harv.*
1342. swaziensis *Bolus.*
1343. tenella *E. & Z.*
    a. calycina *E. & Z.*
    b. hirsutissima *E. & Z.*
1344. uniflora *Kensit.*
1345. versicolor *Benth.*

389. LISTIA, E. Mey. (3658).

1346. heterophylla *E. Mey.*

390. DICHILUS, DC. (3664).

1347. gracilis *E. & Z.*
1348. lebeckioides *DC.*
1349. pilosus *Kensit.*

391. MELOLOBIUM, E. & Z. (3665).

1350. alpinum *E. & Z.*
1351. candicans *E. & Z.*
1352. microphyllum *E. & Z.*
1353. obcordatum *Harv.*

392. CROTALARIA, Dill. (3669).

1354. Belckii *Schinz.*
1355. burkeana *Benth.*
1356. capensis *Jacq.*
1357. globifera *E. Mey.*
    b. brachycarpa *E. Mey.*
1358. laburnifolia *Linn.*
1359. lotoides *Benth.*
1360. macrocarpa *E. Mey.*
1361. nutans *Welw.*
1362. podocarpa *DC.*
1363. recta *Steud.*
1364. sphærocarpa *Perr.*
    a. angustifolia *Hochst.*
1365. (spinosa *Hochst.* ?)

393. ARGYROLOBIUM, E. & Z. (3673).

1366. andrewsianum *Steud.*
    b. racemosum *N. E. Br.*
1367. collinum *E. & Z.*
1368. longipes *N. E. Br.*
1369. pauciflorum *E. & Z.*
1370. sericeum *E. & Z.*
1371. speciosum *E. & Z.*
1372. stipulaceum *E. & Z.*
1373. Sutherlandi *Harv.*
1374. transvaalense *Schinz.*
1375. tuberosum *E. & Z.*

394. MEDICAGO, (Tourn.) Linn. (3688).*

1376. *denticulata* Willd.
1377. *laciniata* Mill.
1378. *sativa* Linn.

395. MELILOTUS, (Tourn.) Linn. (3689).*

1379. *alba* Lam.
1380. *parviflora* Desf.

77. LEGUMINOSÆ—*cont.*

396. TRIFOLIUM, (Tourn.) Linn. (3690).

1381. africanum *Ser.*
1382. *agrarium* Linn.
1383. burchellianum *Ser.*
1384. *hybridum* Linn.
1385. (*dubium* Sibth. ?)
1386. *pratense* Linn.
    a. *perenne* Perc.
1387. *procumbens* Linn.
1388. *repens* Linn.

397. LOTUS, (Tourn.) Linn. (3698).

1389. discolor *E. Mey.*

398. INDIGOFERA, Linn. (3702).

1390. adenoides *Baker.*
1391. alternans *DC.*
1392. arrecta *Benth.*
1393. burkeana *Benth.*
1394. circinata *Benth.*
1395. cryptantha *Benth.*
1396. daleoides *Benth.*
1397. dimidiata *Vogel.*
1398. endecaphylla *Jacq.*
1399. eriocarpa *E. Mey.*
1400. fastigiata *E. Mey.*
1401. filipes *Benth.*
1402. gerrardiana *Harv.*
1403. hedyantha *E. & Z.*
1404. heterotricha *DC.*
1405. hilaris *E. & Z.*
1406. malacostachys *Benth.*
1407. meladenia *Benth.*
1408. oxytropis *Benth.*
1409. parviflora *Heyne.*
1410. rhytidocarpa *Benth.*
1411. rostrata *Bolus.*
1412. rostrata *Conrath.*
1413. sordida *Benth.*
1414. swaziensis *Bolus.*
1415. torulosa *E. Mey.*
1416. transvaalensis *Baker.*
1417. Woodii *Bolus.*
1418. Zeyheri *Spreng.*

399. PSORALEA, Linn. (3703).

1419. obtusifolia *DC.*
1420. pinnata *Linn.*
1421. polysticha *Benth.*

400. TEPHROSIA, Pers. (3718).

1422. capensis *Pers.*
1423. diffusa *E. Mey.*
1424. elongata *E. Mey.*
1425. grandiflora *Pers.*
1426. livida *Sond.*
1427. longipes *Meisn.*
1428. lupinifolia *DC.*
1429. lurida *Sond.*
1430. melanocalyx *Welw.*
1431. oblongifolia *E. Mey.*
1432. plicata *Oliv.*
1433. polystachya *E. Mey.*
1434. semiglabra *Sond.*
1435. sphærosperma (*DC.*) *Baker.*

77. LEGUMINOSÆ—*cont.*

401. MUNDULEA, Benth. (3719).
    1436. suberosa *Benth.*

402. MICROCHARIS, Benth. (3746).
    1437. Galpini *N. E. Br.*

403. SESBANIA, Scop. (3747)
    1438. aculeata *Pers.*

404. SUTHERLANDIA, R. Br. (3754).
    1439. frutescens *R. Br.*

405. LESSERTIA, DC. (3756).
    1440. depressa *Harv.*
    1441. polystachya *Harv.*
    1442. stricta *Bolus.*
    1443. tenuifolia *E. Mey.*

406. ORMOCARPUM, Beauv. (3792).
    1444. trichocarpum (*Taub.*) *Harms*

407. ÆSCHYNOMENE, Linn. (3793).
    1445. dimidiata *Welw.*
    1416. erubescens *E. Mey.*
    1447. glutinosa *Schinz.*
    1448. micrantha *DC.*
    1449. Rehmannii *Schinz.*

408. SMITHIA, Ait. (3796).
    1450. sp.

409. STYLOSANTHES, Linn. (3802).
    1451. mucronata *Willd.*

410. ZORNIA, Gmel. (3804).
    1452. diphylla *Pers.*
    1453. tetraphylla *Michx.*
        b. capensis (*Pers.*) *Harv.*
        c. linearis (*E. Mey.*) *Harv.*

411. DESMODIUM, Desv. (3807).
    1454. hirtum *Guill. & Perr.*
    1455. lasiocarpum *DC.*
    1456. Scalpe *DC.*

412. PSEUDARTHRIA, Wight. & Arn. (3808).
    1457. Hookeri *Wight & Arn.*
    1458. robusta *Schltr.*

413. ALYSICARPUS, Neck. (3810).
    1459. rugosus *DC.*
    1460. vaginalis *DC.*
    1461. Zeyheri *Harv.*

414. DALBERGIA, Linn. (3821).
    1462. armata *E. Mey.*
    1463. obovata *E. Mey.*

415. PTEROCARPUS, Linn. (3828).
    1464. angolensis *DC.*
    1465. sericeus *Benth.*

416. LONCHOCARPUS, H. B. & K. (3834).
    1466. Capassa *Rolfe.*

77. LEGUMINOSÆ—*cont.*

417. VICIA, Linn. (3852).*
    1467. *sativa* Linn.

418. ABRUS, Linn. (3856).
    1468. lævigatus *E. Mey.*
    1469. precatorius *Linn.*

419. DUMASIA, DC. (3861).
    1470. villosa *DC.*

420. GLYCINE, Linn. (3864).
    1471. javanica *Linn.*

421. ERYTHRINA, Linn. (3870).
    1472. caffra *Thunb.*
    1473. tomentosa *R. Br.*
    1474. Zeyheri *Harv.*

422. MUCUNA, Adans. (3877).
    1475. coriacea *Baker.*

423. CANAVALIA, DC. (3891).
    1476. gladiata *DC.*
    1477. obtusifolia *DC.*

424. RHYNCHOSIA, Lour. (3897).
    1478. adenodes *E. & Z.*
    1479. angulosa *Schinz.*
    1480. Bakeri *Schinz.*
    1481. clivorum *S. Moore.*
    1482. crassifolia *Benth.*
    1483. ficifolia *Benth.*
    1484. gibba *E. Mey.*
    1485. hirsuta *E. & Z.*
    1486. longipes *Harms.*
    1487. Memnonia *Harv.*
        b. prostrata *DC.*
    1488. minima *DC.*
    1489. monophylla *Schltr.*
    1490. nervosa *Benth.*
    1491. nitens *Benth.*
    1492. orthodanum *Benth.*
    1493. pauciflora *Bolus.*
    1494. pilosa *Harv.*
    1495. puberula *Harv.*
    1496. remota *Conrath.*
    1497. sigmodes *Benth.*
    1498. spectabilis *Schinz.*
    1499. Totta *DC.*

425. ERIOSEMA, Desv. (3898).
    1500. Burkei *Benth.*
    1501. cajanoides *Benth.*
    1502. cordatum *E. Mey.*
        b. Gueinzii (*E. Mey.*) *Harv.*
    1503. kraussianum *E. Mey.*
    1504. nutans *Schinz.*
    1505. oblongum *Benth.*
    1506. polystachyum (*A. Rich.*) *Baker.*
    1507. populifolium *Benth.*
    1508. rufescens *Schinz.*
    1509. salignum *E. Mey.*

426. FLEMINGIA, Roxb. (3899).
    1510. rhodocarpa *Baker.*

77. LEGUMINOSÆ—*cont.*

427. VIGNA, Savi. (3905).
- 1511. angustifolia *Benth.*
- 1512. Burchellii *Harv.*
- 1513. Davyi *Bolus.*
- 1514. decipiens *Harv.*
- 1515. hirta *Hook.*
- 1516. triloba *Walp.*
  - a. stenophylla *Walp.*
- 1517. vexillata *Benth.*

428. DOLICHOS, Linn. (3910).
- 1518. angustifolius *E. & Z.*
- 1519. axillaris *E. Mey.*
- 1520. brachypus *Harms.*
- 1521. falcatus *Klein.*
- 1522. falciformis *E. Mey.*
- 1523. *Lablab* Linn.
- 1524. linearis *E. Mey.*
- 1525. robustus *Bolus.*

78. GERANIACEÆ, J. St. Hil. (129).

429. GERANIUM, (Tourn.) Linn. (3924).
- 1526. caffrum *E. & Z.*
- 1527. canescens *L'Hérit.*
- 1528. ornithopodum *E. & Z.*

430. MONSONIA, Linn. f. (3925).
- 1529. attenuata *Harv.*
- 1530. biflora *DC.*
- 1531. burkeana *Planch.*
- 1532. ovata *Cav.*
  - b. biflora *Harv.*
  - c. lancifolia *Szysz.*

431. PELARGONIUM, L'Hérit. (3928).
- 1533. aconitophyllum *E. & Z.*
- 1534. alchemilloides *Willd.*
- 1535. dolomiticum *Kunth.*
- 1536. flabellifolium *Harv.*
- 1537. graveolens *Ait.*
- 1538. multicaule *Jacq.*
- 1539. odoratissimum *Ait.*
- 1540. Radula *Ait.*
- 1541. Rehmanni *Szysz.*
- 1542. Zeyheri *Harv.*

79. OXALIDACEÆ, Lindl. (130).

432. OXALIS, Linn. (3936).
- 1543. caprina *Linn.*
- 1544. commutata *Sond.*
- 1545. *corniculata* Linn.
- 1546. luteola *Jacq.*
- 1547. Mariæ *Szysz.*
- 1548. setosa *E. Mey.*
- 1549. Smithii *Sond.*
  - a. latifolia *Sond.*

80. LINACEÆ, Dumort. (132).

433. LINUM, (Tourn.) Linn. (3945).
- 1550. africanum *Linn.*
- 1551. Thunbergii *E. & Z.*

81. ERYTHROXYLACEÆ, Lindl. (134).

434. ERYTHROXYLON, Linn. (3956).
- 1552. monogynum *Harv.*

82. ZYGOPHYLLACEÆ, Lindl. (135).

435. ZYGOPHYLLUM, Linn. (3965).
- 1553. (dregeanum *Presl.* ?)
- 1554. simplex *Linn.*

436. TRIBULUS, (Tourn.) Linn. (3978).
- 1555. terrestris *Linn.*
  - b. hispidissimus (*Presl.*) *Sond.*

437. BALANITES, Delile (3980).
- 1556. sp. nov.

83. RUTACEÆ, Juss. (137).

438. XANTHOXYLUM, Linn. (3990).
- 1557. capense *Harv.*
- 1558. Thunbergii *DC.*
  - b. obtusifolia *Harv.*

439. FAGARA, Linn. (3991).
- 1559. magalis-montana *Engl.*

440. CALODENDRUM, Thunb. (4035).
- 1560. capense *Thunb.*

441. TODDALIA, Juss. (4077).
- 1561. lanceolata *Lam.*

442. CLAUSENA, Burm. (4091).
- 1562. inæqualis (*Presl.*) *Oliv.*

84. SIMARUBACEÆ Lindl. (138).

443. KIRKIA, Oliv. (4128).
- 1563. Wilmsii *Engl.*

85. BURSERACEÆ, Kunth. (139).

444. COMMIPHORA, Jacq. (4151).
- 1564. africana (*Berg.*) *Engl.*
- 1565. (molle *Engl.* ?)
- 1566. Rehmanni *Engl.*

86. MELIACEÆ, Vent. (140).

445. PTÆROXYLON, E. & Z. (4157).
- 1567. utile *E. & Z.*
  - b. robusta *Szysz.*

446. ENTANDROPHRAGMA, C. DC. (4163).
- 1568. caudatum *Sprague.*

447. TURRÆA, Linn. (4171).
- 1569. sp.

86. MELIACEÆ—*cont.*

448. MELIA, Linn. (4175).*
1570. *Azedarach* Linn.

449. EKEBERGIA, Sparm. (4193).
1571. capensis *Sparm.*
1572. Meyeri *Presl.*

450. TRICHILIA, P. Br. (4195).
1573. (capitata *Klotzsch.* ?)
1574. emetica *Vahl.*
1575. pterophylla *C. DC.*

87. MALPIGHIACEÆ, Vent. (141).

451. TRIASPIS, Burch. (4206).
1576. Nelsoni *Oliv.*
1577. Rehmanni *Szysz.*

452. SPHEDAMNOCARPUS, Planch. (4219).
1578. galphimiæfolius *Juss.*
1579. pruriens (*E. Mey.*) *Planch.*
b. major *Szysz.*
1580. Rehmanni *Szysz.*

88. POLYGALACEÆ, Lindl. (145).

453. POLYGALA, (Tourn.) Linn. (4273).
1581. abyssinica *Fres.*
1582. amatymbica *E. & Z.*
1583. arenaria *Willd.*
1584. capillaris *E. Mey.*
1585. Galpinii *Hook. f.*
1586. hottentotta *Presl.*
1587. ohlendorfiana *E. & Z.*
1588. persicariæfolia *DC.*
1589. producta *N. E. Br.*
1590. Schlechteri *Schinz.*
1591. serpentaria *E. & Z.*
1592. tenuifolia *Link.*
b. latifolia *Harv.*
1593. virgata *Thunb.*

454. SECURIDACA, Linn. (4275).
1594. longepedunculata *Fres.*
a. parvifolia *Oliv.*
1595. oblongifolia (*Hochst.*) *B. & H.*

455. MURALTIA, Neck. (4278).
1596. lancifolia *Harv.*
1597. serpylloides *DC.*

89. DICHAPETALACEÆ, Engl. (146).

456. DICHAPETALUM, Thou. (4283).
1598. cymosum (*Hook.*) *Engl.*

90. EUPHORBIACEÆ, J. St. Hil. (147).

457. PSEUDOLACHNOSTYLIS, Pax. (4295).
1599. (maprouneæfolia *Pax.* ?)

90. EUPHORBIACEÆ—*cont.*

458. PHYLLANTHUS, Linn. (4299).
1600. genistoides *Sond.*
1601. glaucophyllus *Sond.*
1602. maderaspatensis *Linn.*
b. Thonningii *Muell. Arg.*
1603. Niruri *Linn.*
1604. parvulus *Sond.*
1605. pentandrus *Schum. & Thonn.*
1606. tenellus *Muell. Arg.*
1607. verrucosus *Thunb.*

459. CYCLOSTEMON, Blume. (4308).
1608. sp.

460. ANTIDESMA, Burm. (4327).
1609. venosum *E. Mey.*

461. BRIDELIA, Willd. (4345).
1610. micrantha *Baill.*
1611. stipularis *Blume.*

462. CROTON, Linn. (4348).
1612. gratissimum *Burch.*

463. ADENOCLINE, Turcz. (4370).
1613. mercurialis *Turcz.*

464. LEIDESIA, Muell. Arg. (4372).
1614. sp.

465. ACALYPHA, Linn. (4407).
1615. indica *Linn.*
1616. peduncularis *Meisn.*
1617. petiolaris *Hochst.*
1618. Rehmanni *Pax.*
1619. Schinzii *Pax.*
1620. villicaulis *Hochst.*

466. TRAGIA, Plum. (4416).
1621. cordata (*Harv.*) *Pax.*
1622. minor *Sond.*
1623. Schinzii *Pax.*

467. DALECHAMPIA, (Plum.) Linn. (4422)
1624. capensis *Zeyher.*
1625. Galpinii *Pax.*

468. RICINUS, (Tourn.) Linn. (4424).
1626. communis *Linn.*
b. *lividus* Jacq.
c. *zanzibarensis* Hort.

469. JATROPHA, Linn. (4433).
1627. *Curcas* Linn.
1628. lagarinthoides *Sond.*

470. CLUYTIA, Linn. (4448).
1629. alaternoides *Linn.*
1630. daphnoides *Willd.*
1631. Galpinii *Pax.*
1632. heterophylla *Willd.*
1633. natalensis *Sond.*
1634. (pulchella *Linn.* ?)

471. EXCŒCARIA, Linn. (4478).
1635. africana *Muell. Arg.*

90. EUPHORBIACEÆ—*cont.*

472. EUPHORBIA, Linn. (4498).
- 1636. angularis *Klotzsch.*
- 1637. Cooperi *N. E. Br.*
- 1638. Davyi *Pax.*
- 1639. Galpini *Pax.*
- 1640. involucrata *E. Mey.*
- 1641. *Peplus* Linn.
- 1642. pilulifera *Linn.*
- 1643. pseudotuberosa *Pax.*
- 1644. pugniformis *Boiss.*
- 1645. (Reinhardtii *Volkens.* ?)
- 1646. rhipsaloides *Welw.*
- 1647. *sanguinea* Hochst.
- 1648. Schinzii *Pax.*
- 1649. striata *Thunb.*
- 1650. transvaalensis *Schltr.*

91. ANACARDIACEÆ, Lindl. (153).

473. SCLEROCARYA, Hochst. (4558).
- 1651. caffra *Sond.*
  - b. dentata *Engl.*

474. HARPEPHYLLUM, Bernh. (4562).
- 1652. caffrum *Bernh.*

475. LANNEA, A. Rich. (4563).
- 1653. discolor (*Sond.*) *Engl.*
- 1654. edulis (*Sond.*) *Engl.*

476. PROTORHUS, Engl. (4576).
- 1655. longifolia (*Bernh.*) *Engl.*

477. HEERIA, Meisn. (4589).
- 1656. paniculosa (*E. Mey.*) *O. Ktze.*
  - b. angustifolia *Engl.*
- 1657. salicina (*Sond.*) *Engl.*

478. RHUS, (Tourn.) Linn. (4594).
- 1658. acutidens *Engl.*
- 1659. burkeana *Sond.*
- 1660. ciliata *Licht.*
- 1661. coriacea *Engl.*
- 1662. dentata *Thunb.*
- 1663. discolor *E. Mey.*
  - b. paucinervis *Engl.*
- 1664. dissecta *Thunb.*
- 1665. divaricata *E. & Z.*
- 1666. dregeana *Sond.*
- 1667. excisa *Thunb.*
- 1668. filiformis *Schinz.*
- 1669. flexuosa *Diels.*
- 1670. fulvescens (*Engl.*) *Diels.*
- 1671. Galpinii *Schinz.*
- 1672. Gerrardii *Harv.*
- 1673. glaberrima *Engl.*
- 1674. gracillima *Engl.*
- 1675. Gueinzii *Sond.*
- 1676. incana *Mill.*
- 1677. incisa *Linn. f.*
- 1678. lævigata *Linn.*
- 1679. lancea *Linn. f.*
- 1680. lucida *Linn.*

91. ANACARDIACEÆ—*cont.*

478. RHUS—*cont.*
- 1681. magalis-montana *Sond.*
- 1682. mucronata *Thunb.*
- 1683. oblanceolata *Schinz.*
- 1684. puberula *E. & Z.*
- 1685. Sonderi *Engl.*
- 1686. spinescens *Diels.*
- 1687. tomentosa *Linn.*
- 1688. transvaalensis *Engl.*
- 1689. tridactyla *Burch.*
- 1690. villosa *Linn. f.*
  - b. gracilis *Engl.*
- 1691. viminalis *Vahl.*
- 1692. Wilmsii *Diels.*
- 1693. Zeyheri *Sond.*

92. AQUIFOLIACEÆ, DC. (157).

479. ILEX, (Tourn.) Linn. (4614).
- 1694. capensis *Sond.*

93. CELASTRACEÆ, Lindl. (158).

480. GYMNOSPORIA, Benth. (4627).
- 1695. acuminata (*Linn. f.*) *Szysz.*
- 1696. angularis (*Sond.*) *Sim.*
- 1697. botsabelensis *Loes.*
- 1698. buxifolia (*Linn.*) *Szysz.*
  - a. genuina (*Sond.*) *Szysz.*
  - b. empleurifolia (*Sond.*) *Szysz.*
  - c. venenata (*Sond.*) *Szysz.*
- 1699. condensata *Sprague.*
- 1700. deflexa *Sprague.*
- 1701. fasciculata *Loes.*
- 1702. harveyana *Loes.*
- 1703. heterophylla (*E. & Z.*) *Loes.*
- 1704. huillensis (*Welw.*) *Szysz.*
- 1705. luteola (*Del.*) *Szysz.*
- 1706. nemorosa (*E. & Z.*) *Szysz.*
- 1707. polyacantha (*Sond.*) *Szysz.*
- 1708. (Schlechteri *Loes.* ?)
- 1709. tenuispina (*Sond.*) *Szysz.*
- 1710. undata (*Thunb.*) *Szysz.*
- 1711. vacciniifolia *Conrath.*
- 1712. Zeyheri (*Sond.*) *Loes.*

481. CATHA, Forsk. (4629).
- 1713. edulis *Forsk.*

482. PTEROCELASTRUS, Meisn. (4630).
- 1714. (echinatus *N. E. Br.* ?)
- 1715. Galpinii *Loes.*

483. ELÆODENDRON, Jacq. f. (4640).
- 1716. æthiopicum (*Thunb.*) *Oliv.*
  - b. pubescens *Oliv.*
- 1717. confertifolium (*Tul.*) *Szysz.*
  - b. leptocarpum (*Sond.*) *Szysz.*
- 1718. Rehmanni *Szysz.*

484. CASSINE, Linn. (4641).
- 1719. scandens *E. & Z*
  - a. laxa *Auct.*

94. HIPPOCRATEACEÆ, H. B. &K. (159)

485. Salacia, Linn. (4662).
    1720. Rehmannii *Schinz.*

95. ICACINACEÆ, Miers. (162).

486. Cassinopsis, Sond. (4671).
    1721. capensis *Sond.*

487. Apodytes, E. Mey. (4686).
    1722. dimidiata *E. Mey.*

96. SAPINDACEÆ, Juss. (165).

488. Cardiospermum, Linn. (4726).
    1723. Halicacabum *Linn.*
    1724. microcarpum *H. B. & K.*

489. Allophylus, Linn. (4734).
    1725. magica (*Baker*) *Taub.*
    1726. melanocarpa (*Arn.*) *Radlk.*

490. Pappea, E. & Z. (4784).
    1727. capensis *E. & Z.*
        a. Radlkoferi *Schinz.*

491. Hippobromus, E. & Z. (4836).
    1728. pauciflorus (*Linn.*) *Radlk.*

97. MELIANTHACEÆ, Endl. (167).

492. Bersama, Fres. (4853).
    1729. lucens *Szysz.*

493. Melianthus, Linn. (4854).
    1730. comosus *Vahl.*
    1731. dregeanus *Sond.*

494. Greyia, Hook. & Harv. (4855).
    1732. Radlkoferi *Szysz.*
    1733. Sutherlandii *Hook. & Harv.*

98. BALSAMINACEÆ, Lindl. (168).

495. Impatiens, Riv. (4856).
    1734. capensis *Thunb.*

99. RHAMNACEÆ, Lindl. (169).

496. Zizyphus, (Tourn.) Linn. (4861).
    1735. helvola *Sond.*
    1786. mucronata *Willd.*
        b. glabrata *Sond.*
        c. pubescens *Sond.*
    1737. zeyheriana *Sond.*

497. Rhamnus, (Tourn.) Linn. (4875).
    1738. prinoides *L'Hérit.*
    1739. Zeyheri *Sond.*

99 RHAMNACEÆ—*cont.*

498. Helinus, E. Mey. (4905).
    1740. ovatus *E. Mey.*

100. VITACEÆ, Lindl. (170).

499. Rhoicissus, Planch. (4917).
    1741. cuneifolia (*E. & Z.*) *Planch.*
    1742. erythrodes (*Fres.*) *Planch.*
        b. ferruginea (*Bak.*) *Gilg.*
    1743. rhomboidea (*E. Mey.*) *Planch.*
        b. transvaalensis (*Szysz.*) *Gilg.*
    1744. Thunbergii (*E. & Z.*) *Planch.*

500. Cissus, Linn. (4918).
    1745. cirrhosa *Willd.*
        b. transvaalensis (*Szysz.*) *Gilg.*
    1746. humilis (*N. E. Br.*) *Gilg.*
    1747. hypoleuca *Harv.*
    1748. lanigera *Harv.*
    1749. oleracea *Bolus.*
    1750. orientalis *Lam.*
    1751. quadrangularis *Linn.*
    1752. Sandersoni *Planch.*
    1753. succulenta (*Galpin*) *Gilg.*

101. TILIACEÆ, Juss. (174).

501. Corchorus, (Tourn.) Linn. (4953).
    1754. asplenifolius *Burch.*
    1755. muricatus *Hochst.*
    1756. serræfolius *Burch.*
        b. lancifolius *Szysz.*
        c. linearifolius *Szysz.*
    1757. trilocularis *Linn.*

502. Sparmannia, Linn. f. (4957).
    1758. africana *Linn.*
    1759. palmata *E. Mey.*

503. Grewia, Linn. (4966).
    1760. caffra *Meisn.*
    1761. cana *Sond.*
    1762. carpinifolia *Juss.*
    1763. columnaris *Smith.*
    1764. discolor *Fres.*
    1765. hermannioides *Harv.*
    1766. monticola *Sond.*
    1767. occidentalis *Linn.*
    1768. pilosa *Lam.*
    1769. populifolia *Vahl.*
    1770. vernicosa *Schinz.*

504. Triumfetta, Plum. (4975).
    1771. annua *Linn.*
    1772. effusa *E. Mey.*
    1773. hirsuta *Sprague & Hutch.*
    1774. obtusicornis *Sprague & Hutch.*
    1775. pilosa *Roth.*
        a. tomentosa *Szysz.*
    1776. rhomboidea *Jacq.*
    1777. Sonderi *Ficalho & Hiern.*
    1778. Welwitschii *Mast.*
        a. Rehmannii (*Szysz.*) *Sprague & Hutch.*

102. MALVACEÆ, Juss. (175).

505. ABUTILON, (Tourn.) Adans. (4983).
1779. *indicum* G. Don.
b. *populifolium* Wight.
1780. intermedium *Hochst.*
1781. Rehmanni *E. G. Bak.*
1782. sonneretianum *Cav.*

506. MALVA, (Tourn.) Linn. (4992).*
1783. *parviflora* Linn.

507. SIDA, Linn. (4998).
1784. carpinifolia *Linn.*
1785. cordifolia *Linn.*
1786. longipes *Harv.*
b. canescens *Szysz.*
1787. *rhombifolia* Linn.
1788. spinosa *Linn.*
1789. triloba *Cav.*

508. PAVONIA, Cav. (5007).
1790. clathrata *Mast.*
1791. columella *Cav.*
1792. commutata *Conrath.*
1793. galpiniana *Schinz.*
1794 kraussiana *Hochst.*
1795. macrophylla *E. Mey.*
1796. mollis *E. Mey.*
1797. præmorsa *Willd.*
1798. zeylanica *Cav.*

509. HIBISCUS, Linn. (5013).
1799. æthiopicus *Linn.*
b. ovatus *E. & Z.*
1800. atromarginatus *E. & Z.*
1801. calycinus *Willd.*
1802. calyphyllus *Cav.*
b. genuinus *Hochr.*
1803. Cannabinus *Linn.*
1804. cordatus *Harv.*
1805. Engleri *K. Schum.*
1806. leiospermus *Harv.*
1807. Ludwigii *E. & Z.*
1808. malacospermus *E. Mey.*
b. luteus *Harv.*
c. purpureus *Harv.*
1809. physaloides *Guill. & Perr.*
1810. pusillus *Thunb.*
1811. Trionum *Linn.*
a. hispidus *DC.*
b. hastæfolius (*E. Mey.*) *Harv.*
c. magnus *Hochr.*
d. ternatus *Harv.*

510. CIENFUEGOSIA. Cav. (5019).
1812. digitata *Cav.*
a. genuina *Hochr.*
1813. Gerrardi (*Harv.*) *Hochr.*

511. GOSSYPIUM, Linn. (5020).
1814. herbaceum *Linn.*

103. BOMBACACEÆ, K. Schum. (177).

512. ADANSONIA, Linn. (5023).
1815. digitata *Linn.*

104. STERCULIACEÆ, Schott. & Endl. (178).

513. MELHANIA, Forsk. (5047).
1816. acuminata *Mast.*
1817. agnosta *K. Schum.*
1818. albicans *Baker.*
1819. Burchellii *DC.*
1820. didyma *E. & Z.*
b. linearifolia (*Sond.*) *Szysz.*
1821. ferruginea *Szysz.*
1822. rostrata *DC.*
1823. Rehmanni *Szysz.*
1824. transvaalensis *Szysz.*

514. DOMBEYA, Cav. (5053).
1825. angulata *Cav.*
1826. Burgessiæ *Gerrard.*
1827. cymosa *Harv.*
1828. densiflora *Planch.*
1829. elegans *K. Schum.*
1830. pulchra *N. E. Br.*

515. HERMANNIA, Linn. (5056).
1831. abyssinica (*Hochst.*) *K. Sch.*
1832. adenotricha *K. Schum.*
1833. auricoma *K. Schum.*
1834. betonicæfolia *E. & Z.*
1835. borraginiflora *Hook.*
1836. brachypetala *Harv.*
1837. bryoniæfolia *Burch.*
1838. chrysantha (*Planch.*) *K. Schum*
1839. coccocarpa (*E. & Z.*) *K. Schum*
1840. (cordifolia *Harv.* ?)
1841. cristata *Bolus.*
1842. depressa *N. E. Br.*
1843. dolomitica *Engl.*
1844. erecta *N. E. Br.*
1845. filipes *Harv.*
1846. floribunda *Harv.*
1847. Gerrardi *Harv.*
1848. grandifolia *N. E. Br.*
1849. grandistipula (*Buch.*) *K. Sch.*
1850. lancifolia *Szysz.*
1851. micropetala *Harv.*
1852. montana *N. E. Br.*
1853. multicaulis *E. Mey.*
a. latifolia (*Harv.*) *K. Schu.*
1854. natalensis *Szysz.*
1855. parviflora (*E. & Z.*) *K. Schum.*
1856. Rehmanni (*Szysz.*) *K. Schum.*
1857. staurostemon *K. Schum.*
1858. stellulata (*Harv.*) *K. Schum.*
1859. tephrocapsa *K. Schum.*
1860. tomentosa (*Turcz.*) *Schinz.*
1861. transvaalensis *Schinz.*
1862. vestita (*Harv.*) *K. Schum.*

516. WALTHERIA, Linn. (5059).
1863. indica *Linn.*

517. STERCULIA, Linn. (5083).
1864 murex *Hemsl.*

105. OCHNACEÆ, Lindl. (182).

518. OCHNA, Linn. (5112).
1865. arborea *Burch.*
1866. atropurpurea *DC.*
b. natalitia (*Meisn.*) *Harv.*
1867. pulchra *Hook.*
1868. Rehmannii *Szysz.*

106. GUTTIFERÆ, Juss. (187).

519. HYPERICUM, (Tourn.) Linn. (5168).
1869. æthiopicum *Thunb.*
b. glaucescens *Sond.*
1870. humifusum *Linn.*
1871. Lalandii *Choisy.*
b. graminea *Forst.*
c. lanceolatum *Sond.*
1872. lanceolatum *Lam.*

520. GARCINIA, Linn. (5199).
1873. (angolensis *Vesque.* ?)
1874. Gerrardi *Harv.*

107. ELATINACEÆ, Lindl. (189).

521. BERGIA, Linn. (5230).
1875. decumbens *Planch.*
1876. polyantha *Sond.*

108. FRANKENIACEÆ, DC (190).

522. FRANKENIA, Linn. (5233).
1877. pulverulenta *Linn.*

109. VIOLACEÆ, DC. (198).

523. IONIDIUM, (Vent.) DC. (5271).
1878. natalense *Harv.*

524. VIOLA, (Tourn.) Linn. (5274).
1879. abyssinica *Steud.*

110. FLACOURTIACEÆ, Dumort. (199).

525. RAWSONIA, Harv. & Sond. (5275).
1880. lucida *Harv. & Sond.*

526. ONCOBA, Forsk. (5284).
1881. spinosa *Forsk.*

527. KIGGELARIA, Linn. (5296).
1882. africana *Linn.*
1883. dregeana *Turcz.*

528. SCOLOPIA, Schreb. (5304).
1884. Ecklonii (*Arn.*) *Warb.*

529. GERRARDINA, Oliv. (5312).
1885. foliosa *Oliv.*

110. FLACOURTIACEÆ—*cont.*

530. TRIMERIA, Harv. (5315).
1886. grandifolia (*Hochst.*) *Warb.*

531. NEUMANNIA, A. Rich. (5326).
1887. myrtiflora (*Galpin*) *Warb.*
1888. theæformis *A. Rich.*

532. DOVYALIS, E. Mey. (5328).
1889. rhamnoides (*Burch.*) *Harv.*
1890. tristis (*Sond.*) *Warb.*
1891. Zeyheri (*Sond.*) *Warb.*

111. TURNERACEÆ, H. B. & K. (201).

533. WORMSKIOLDIA, Thonn. (5355).
1892. longepedunculata *K. Schum.*
1893. tanacetifolia *Klotsch.*

534. TURNERA, Plum. (5360).
1894. capensis *Harv.*

112. PASSIFLORACEÆ, Lindl. (203).

535. TRYPHOSTEMMA, Harv. (5369).
1895. Sandersoni *Harv.*
1896. Schlechteri *Schinz.*
1897. triloba *Bolus.*

536. ADENIA, Forsk. (+ Modecca, Lam.) (5370)
1898. digitata (*Harv.*) *Harms.*
1899. gummifera (*Harv.*) *Harms.*
1900. hastata (*Harv.*) *Harms.*

537. PASSIFLORA, Linn. (5372).*
1901. *edulis* Sims.

113. LOASACEÆ, Lindl. (206).

538. KISSENIA, R. Br. (5388).
1902. spathulata *R. Br.*

114. BEGONIACEÆ, R. Br. (208).

539. BEGONIA, (Tourn.) Linn. (5397).
1903. caffra *Meisn.*
1904. Dregei *Otto & Dietr.*
1905. natalensis *Hook.*

115. CACTACEÆ, Lindl. (210).*

540. OPUNTIA, (Tourn.) Mill. (5417).*
1906. *Ficus-indica* Mill.
1907. *monacantha* Haw.
1908. *pusilla* Salm-Dyck.
1909. *Tuna* Mill.

116. OLINIACEÆ, C. Presl. (213).

541. OLINIA, Thunb. (5428).
1910. micrantha *Dcsne.*
1911. ternata *Gilg.*

117. THYMELÆACEÆ, Reichb. (214).

542. PEDDIEA, Harv. (5434).
1912. africana *Harv.*

543. LASIOSIPHON, Fresen. (—).
1913. anthylloides *Meisn.*
1914. Burchellii *Meisn.*
1915. caffer *Meisn.*
1916. linifolius *Dcsne.*
1917. Kraussii *Meisn.*
1918. polycephalus *H. H. W. Pears.*
1919. splendens *Endl.*

544. ARTHROSOLEN, C. A. Mey. (—).
1920. gymnostachya *C. A. Mey.*

545. GNIDIA, Linn. (5435).
1921. fastigiata *Rendle.*
1922. microcephala *Meisn.*

546. DAIS, Linn. (5465).
1923. cotinifolia *Linn.*

118. LYTHRACEÆ, Lindl. (216).

547. AMMANNIA, Houst. (5474).
1924. anagalloides *Sond.*

548. LYTHRUM, Linn. (5476).
1925. rigidulum *Sond.*
1926. sagittæfolium *Sond.*

549. GALPINIA, N. E. Br. (5480).
1927. transvaalica *N. E. Br.*

550. NESÆA, Comm. (5486).
1928. floribunda *Sond.*
1929. sagittifolia *Koehne.*

119. RHIZOPHORACEÆ, Lindl. (220).

551. WEIHEA, Spreng. (5528).
1930. madagascariensis *Spreng.*
1931. subpeltata *Sim.*

120. COMBRETACEÆ, R. Br. (221).

552. COMBRETUM, (Linn.) Lœfl. (5538).
1932. apiculatum *Sond.*
1933. erythrophyllum *Sond.*
1934. cataracticum *Diels.*
1935. Galpinii *Engl. & Diels.*
1936. glomeruliflorum *Sond.*
1937. Gueinzii *Sond.*
1938. hereroënse *Schinz.*
b. villosissimum *Engl. & Diels.*
1939. holosericeum *Sond.*
1940. Kraussii *Hochst.*
1941. lydenburgianum *Engl. & Diels.*
1942. microphyllum *Klotsch.*
1943. porphyrolepis *Engl. & Diels.*

120. COMBRETACEÆ—*cont.*

552. COMBRETUM—*cont.*
1944. prunifolium *Engl. & Diels.*
1945. suluense *Engl. & Diels.*
1946. tenuipes *Engl. & Diels.*
1947. transvaalense *Schinz.*
1948. Zeyheri *Sond.*

553. TERMINALIA, Linn. (5544).
1949. phanerophlebia *Engl. & Diels.*
1950. prunioides *Laws.*
1951. sericea *Burch.*

121. MYRTACEÆ, Pers. (222).

554. SYZYGIUM, Gærtn. (5583).
1952. cordatum *Hochst.*
1953. Gerrardii (*Harv.*) *Hochst.*
1954. sp. nov.

555. EUCALYPTUS, L'Hérit. (5598).*
1955. *globulus* L'Hérit.
1956. *rostrata* Schltdl.
1957. *viminalis* Labill.

556. HETEROPYXIS, Harv. (9712).
1958. canescens *Oliv.*
1959. natalensis *Harv.*

122. MELASTOMATACEÆ, R. Br. (223).

557. DISSOTIS, Benth. (5659).
1960. debilis (*Sond.*) *Triana.*
1961. incana (*E. Mey.*) *Triana.*
1962. phæotricha (*Hochst.*) *Triana.*

123. ONAGRACEÆ, Lindl. (224).

558. JUSSIEUA, Linn. (5791).
1963. angustifolia *Lam.*
1964. fluitans *Hochst.*

559. LUDWIGIA, Linn. (5793).
1965. palustris *Ell.*

560. EPILOBIUM, Dill. (5795).
1966. flavescens *E. Mey.*
1967. hirsutum *Linn.*
1968. tetragonum *Linn. f.*

561. ONAGRA, (Tourn.) Adans. (5803).*
1969. sp.

562. ŒNOTHERA, Linn. (5804).*
1970. *biennis* Linn.
b. *grandiflora* Lindl.
1971. *nocturna* Jacq.

563. XYLOPLEURUM, Spach. (5807).*
1972. *roseum* (Ait.) Raim.
1973. *tetrapterum* (Cav.) Raim.

124. HALORAGIDACEÆ, Lindl. (225).

564. Myriophyllum, Linn. (5835).
 1974. spicatum *Linn.*

565. Gunnera, Linn. (5836).
 1975. perpensa *Linn.*

125. ARALIACEÆ, Vent. (227).

566. Cussonia, Thunb. (5872).
 1976. (Gerrardi *Seem.* ?)
 1977. natalensis *Sond.*
 1978. paniculata *E. & Z.*
 1979. spicata *Thunb.*
 1980. umbellifera *Sond.*

126. UMBELLIFERÆ, Morison. (228).

567. Hydrocotyle, (Tourn.) Linn. (5893)
 1981. asiatica *Linn.*
 1982. verticillata *Thunb.*

568. Sanicula, (Tourn.) Linn. (5918).
 1983. europæa *Linn.*

569. Alepidea, De la Roche. (5922).
 1984. amatymbica *E. & Z.*
 1985. longifolia *E. Mey.*
 1986. setifera *N. E. Br.*

570. Conium, Linn. (5970).*
 1987. *maculatum* Linn.

571. Lichtensteinia, Ch. & Schl. (5990).
 1988. sp.

572. Heteromorpha, Ch. & Schl. (5992).
 1989. arborescens *Ch. & Schl.*
 1990. glaucescens *Engl.*
 1991. involucrata *Conrath.*

573. Apium, Linn. (6004).*
 1992. *graveolens* Linn.

574. Pituranthos, Viv. (6013).
 1993. Burchellii (*DC.*) *B. & H.*

575. Pimpinella, Riv. (6033).
 1994. caffra *Dietr.*

576. Sium, Linn. (6038).
 1995. Thunbergii *DC.*

577. Annesorhiza, Ch. & Schl. (6078).
 1996. sp.

578. Peucedanum, (Tourn.) Linn. (6116).
 1997. capensis *Sond.*
 1998. fraxinifolium *Hiern.*
 1999. magalis-montanum *Sond.*

126. UMBELLIFERÆ—*cont.*

579. Pastinaca, Linn. (6120).*
 2000. *sativa* Linn.

580. Choritænia, Benth. (6129).
 2001. capensis (*Sond. & Harv.*) *B. & H*

127. CORNACEÆ, Link. (229).

581. Curtisia, Ait. (6156).
 2002. faginea *Ait.*

128. ERICACEÆ, DC. (233).

582. Vaccinium, Linn. (6216).
 2003. Exul *Bolus.*

583. Erica, (Tourn.) Linn. (6237).
 2004. Alopecurus *Harv.*
  b. glabriflora *Bolus.*
 2005. alticola *Guth. & Bolus.*
 2006. Atherstonei *Diels.*
 2007. cerinthoides *Linn.*
  b. barbertona (*Galpin*) *Bolus.*
 2008. drakensbergensis *Guth. & Bolus.*
 2009. hispidula *Linn.*
 2010. Oatesii *Rolfe.*
 2011. Schlechteri *Bolus.*
 2012. subverticillaris *Diels.*
  b. revoluta *Bolus.*
 2013. Woodii *Bolus.*

129. MYRSINACEÆ, Lindl. (236).

584. Mæsa, Forsk. (6283).
 2014. rufescens *A. DC.*

585. Myrsine, Linn. (6313).
 2015. africana *Linn.*

586. Rapanea, Aubl. (6314).
 2016. melanophlœos (*Linn.*) *Mez.*

130. PRIMULACEÆ, Vent. (237).

587. Samolus, (Tourn.) Linn. (6328).
 2017. Valerandi *Linn.*

588. Lysimachia, Linn. (6330).
 2018. parviflora *Baker.*

589. Anagallis, (Tourn.) Linn. (6338).
 2019. *arvensis* Linn.
  b. *cœrulea* Gren. & Godr.
 2020. Huttoni *Harv.*
 2021. nana *Schinz.*

590. Dodecatheon, Linn. (6341).*
 2022. *Meadia* Linn.

131. PLUMBAGINACEÆ, Lindl. (238).

591. Plumbago, (Tourn.) Linn. (6343).

2023. capensis *Thunb.*
2024. zeylanica *Linn.*

132. SAPOTACEÆ, Dumort. (239).

592. Sideroxylon, (Dill.) Linn. (6368).

2025. inerme *Linn.*
2026. Randii *S. Moore.*

593. Chrysophyllum, Linn. (6377).

2027. magalis-montanum *Sond.*
2028. Wilmsii *Engl.*

594. Mimusops, Linn. (6386).

2029. obovata *Sond.*
2030. Zeyheri *Sond.*

133. EBENACEÆ, Vent. (240).

595. Royena, Linn. (6403).

2031. ambigua *Vent.*
2032. cordata *E. Mey.*
2033. Galpinii *Hiern.*
2034. hirsuta *Linn.*
2035. lucida *Linn.*
2036. microphylla *Burch.*
2037. nitens *Harv.*
2038. pallens *Thunb.*
2039. villosa *Linn.*
2040. Wilmsii *Guerke.*

596. Euclea, Murr. (6404).

2041. divinorum *Hiern.*
2042. Guerkei *Hiern.*
2043. lanceolata *E. Mey.*
2044. macrophylla *E. Mey.*
2045. multiflora *Hiern.*
2046. natalensis *A. DC.*
2047. ovata *Burch.*
2048. undulata *Thunb.*

597. Diospyros, Linn. (6406).

2049. mespiliformis *Hochst.*

134. OLEACEÆ, Lindl. (243).

598. Schrebera, Roxb. (6422).

2050. argyrotricha *Gilg.*
2051. Saundersiæ *Harv.*

599. Olea, (Tourn.) Linn. (6434).

2052. (chrysophylla *Lam.* ?)
2053. foveolata *E. Mey.*
2054. laurifolia *Lam.*
2055. (Mackenii *Harv.* ?)
2056. macrocarpa *C. H. Wrght.*
2057. verrucosa *Link.*

600. Menodora, Humb. & Bonpl. (6438).

2058. africana *Hook.*
2059. heterophylla *Moric.*

134. OLEACEÆ—*cont.*

601. Jasminum, (Tourn.) Linn. (6440).

2060. angulare *Vahl.*
2061. breviflorum *Harv.*
2062. glaucum (*Linn. f.*) *Ait.*
2063. mauritianum *Bojer.*
2064. multipartitum *Hochst.*
2065. quinatum *Schinz.*
2066. stenolobum *Rolfe.*
2067. streptopus *E. Mey.*
2068. tortuosum *Willd.*

135. LOGANIACEÆ, Lindl. (245).

602. Strychnos, Linn. (6460).

2069. dysophylla *Benth.*
2070. Henningsii *Gilg.*
2071. pungens *Solered.*
2072. schumanniana *Gilg.*
2073. spinosa *Lam.*

603. Anthocleista, Afzelius. (6466).

2074. zambesiaca *Baker.*

604. Nuxia, Comm. (6469).

2075. breviflora *S. Moore.*
2076. congesta *R. Br.*
    a. tomentosa (*Sond.*) *Cummins*
2077. dentata *R. Br.*
    b. transvaalensis *S. Moore.*
2078. floribunda *Benth.*
2079. pubescens *Sond.*

605. Gomphostigma, Turcz. (6470).

2080. scoparioides *Turcz.*

606. Chilianthus, Burch. (6471).

2081. arboreus *A. DC.*
2082. dysophyllus *A. DC.*

607. Buddleia, Linn. (6473).

2083. auriculata *Benth.*
    a. euryifolia *Prain.*
2084. *lindleyana* Forst.
2085. salvifolia *Lam.*

136. GENTIANACEÆ, Dumort. (246)

608. Sebæa, Soland. (6481).

2086. Burchellii *Gilg.*
2087. confertiflora *Schinz.*
2088. Conrathii *Schinz.*
2089. erecta *A. W. Hill.*
2090. erosa *Schinz.*
2091. exigua *Schinz.*
2092. filiformis *Schinz.*
2093. grandiflora *Schinz.*
2094. imbricata *A. W. Hill.*
2095. Junodii *Schinz.*
2096. leiostyla *Gilg.*
2097. linearifolia *Schinz.*
2098. macrophylla *Gilg.*
2099. mirabilis *Gilg.*
2100. polyantha *Gilg.*

136. GENTIANACEÆ—*cont.*

608. SEBÆA—*cont.*
2101. pygmæa Schinz.
2102. Rehmannii *Schinz.*
2103. repens *Schinz.*
2104. saccata *Schinz.*
2105. schinziana *Gilg.*
2106. Schönlandii *Schinz.*
2107. sedoides *Gilg.*

609. EXOCHÆNIUM, Griseb. (6483).
2108. grande *Griseb.*

610. ENICOSTEMMA, Blume. (6484).
2109. littorale *Blume.*

611. CHIRONIA, Linn. (6503).
2110. baccifera *Linn.*
2111. humilis *Gilg.*
b. Wilmsii *Prain.*
2112. Krebsii *Griseb.*
2113. palustris *Burch.*
a. radicata (*E. Mey.*) *Schoch.*
2114. purpurascens *B. & H.*
2115. transvaalensis *Gilg.*

612. SWERTIA, Linn. (6512).
2116. stellarioides *Fic.*

613. LIMNANTHEMUM, S. G. Gmel. (6545).
2117. thunbergianum *Griseb.*

137. APOCYNACEÆ, Lindl. (247).

614. ACOKANTHERA, G. Don. (6558).
2118. venenata *G. Don.*

615. CARISSA, Linn. (6559).
2119. Arduina *Lam.*
2120. edulis *Vahl.*
b. major *Stapf.*
c. tomentosa *Stapf.*

616. LANDOLPHIA, Beauv. (6562).
2121. capensis *Oliv.*
2122. (Kirkii *Dyer* ?)

617. DIPLORRHYNCHUS, Welw. (6589).
2123. mossambicensis *Benth.*

618. LOCHNERA, Reichb. (6597).*
2124. *rosea* Reichb.

619. RAUWOLFIA, Plum. (6619).
2125. caffra *Sond.*
2126. (natalensis *Sond.* ?)

620. ADENIUM, R. & S. (6680).
2127. multiflorum *Klotzsch.*
2128. oleifolium *Stapf.*
2129. swazicum *Stapf.*

621. PACHYPODIUM, Lindl. (6681).
2130. Saundersii *N E. Br.*

137. APOCYNACEÆ—*cont.*

622. NERIUM, Linn. (6687).*
2131. *Oleander* Linn.

623. STROPHANTHUS, DC. (6688).
2132. speciosus *Reber.*

138. ASCLEPIADACEÆ, Lindl. (248).

624. CRYPTOLEPIS, R. Br. (6740).
2133. capensis *Schltr.*
2134. oblongifolia (*Meissn.*) *Schltr.*
2135. obtusa *N. E. Br.*
2136. transvaalensis *Schltr.*

625. STOMATOSTEMMA, N. E. Br. (6741).
2137. Monteiroæ (*Oliv.*) *N. E. Br.*

626. RAPHIONACME, Harv. (6747).
2138. Burkei *N. E. Br.*
2139. divaricata *Harv.*
2140. elata *N. E. Br.*
2141. Galpinii *Schltr.*
2142. procumbens *Schltr.*
2143. velutina *Schltr.*

627. SECAMONE, R. Br. (6860).
2144. Alpini *Schultes.*
2145. frutescens *Dcsne.*
2146. Gerrardi *Harv.*
2147. zambesiaca *Schltr.*
a. parvifolia *N. E. Br.*

628. PARAPODIUM, E. Mey. (6762).
2148. costatum *E. Mey.*
2149. simile *N. E. Br.*

629. WOODIA, Schltr. (6790).
2150. mucronata *N. E. Br.*
a. trifurcata *N. E. Br.*
2151. singularis *N. E. Br.*

630. XYSMALOBIUM, R. Br. (6777).
2152. acerateoides *N. E. Br.*
2153. asperum *N. E. Br.*
2154. brownianum *S. Moore.*
2155. confusum *Scott-Ell.*
2156. parviflorum *Harv.*
2157. stockenstromense *Scott-Ell.*
2158. undulatum *R. Br.*

631. PERIGLOSSUM, Dcsne. (6783).
2159. angustifolium *Dcsne.*
2160. kassnerianum *Schltr.*

632. CORDYLOGYNE, E. Mey. (—).
2161. globosa *E. Mey.*

633. KREBSIA, Harv. (6787A).
2162. corniculata *Schltr.*
2163. stenoglossa *Schltr.*

138. ASCLEPIADACEÆ—*cont.*

634. SCHIZOGLOSSUM, E. Mey. (6778).

2164. aciculare *N. E. Br.*
2165 altissimum *Schltr.*
2166. araneiferum *Schltr.*
2167. biflorum *Schltr.*
  b. concinnum *N. E. Br.*
2168. capitatum *Schltr.*
2169. Conrathii *Schltr.*
2170. Davyi *N. E. Br.*
2171. filipes *Schltr.*
2172. Galpinii *Schltr.*
2173. garcianum *Schltr.*
2174. glabrescens *Schltr.*
2175. interruptum *Schltr.*
2176. lamellatum *Schltr.*
2177. loreum *S. Moore.*
2178. nitidum *Schltr.*
2179. pachyglossum *Schltr.*
  a. productum *N. E. Br.*
2180. periglossoides *Schltr.*
2181. pulchellum *Schltr.*
2182. pumilum *Schltr.*
2183. restioides *Schltr.*
2184. robustum *Schltr.*
2185. Schlechteri *N. E. Br.*
2186. stenoglossum *Schltr.*
2187. tridens *N. E. Br.*
2188. umbelluliferum *Schltr.*
2189. unicum *N. E. Br.*

635. ASCLEPIAS, Linn. (6791).

2190. adscendens *Schltr.*
2191. affinis *Schltr.*
2192. aurea *Schltr.*
  b. vittata *N. E. Br.*
2193. brevicuspis *Schltr.*
2194. brevipes *Schltr.*
2195. Burchellii *Schltr.*
2196. crassinervis *N. E. Br.*
2197. cucullata *Schltr.*
2198. cultriformis (*Harv.*) *Schltr.*
2199. decipiens *N. E. Br.*
2200. densiflora *N. E. Br.*
2201. depressa *Schltr.*
2202. dissona *N. E. Br.*
2203. dregeana *Schltr.*
  a. Calceolus (*S. Moore*) *N. E. Br.*
2204. eminens *Schltr.*
2205. fallax *Schltr.*
2206. *fruticosa* Linn.
2207. gibba *Schltr.*
  b. media *N. E. Br.*
2208. glaucophylla *Schltr.*
2209. humilis (*E. Mey.*) *Schltr.*
2210. macra *Schltr.*
2211. macropus *Schltr.*
2212. meliodora *Schltr.*
  b. brevicoronata *N. E. Br.*
2213. meyeriana *Schltr.*
2214. multicaulis *Schltr.*
2215. rivularis *Schltr.*
2216. stellifera *Schltr.*
2217. ulophylla *Schltr.*
2218. velutina *Schltr.*

138. ASCLEPIADACEÆ—*cont.*

636. PACHYCARPUS, Decsne. (6787).

2219. appendiculatus *E. Mey.*
2220. campanulatus *N. E. Br.*
  a. Sutherlandii *N. E. Br.*
2221. concolor *E. Mey.*
2222. decorus *N. E. Br.*
2223. Galpinii *N. E. Br.*
2224. Gerrardi *N. E. Br.*
2225. grandiflorus *E. Mey.*
  a. tomentosus *N. E. Br.*
2226. insignis *N. E. Br.*
2227. rigidus *E. Mey.*
2228. scaber *N. E. Br.*
2229. schinzianus *N. E. Br.*
2230. stelliceps *N. E. Br.*
2231. transvaalensis *N. E. Br.*
2232. validus *N. E. Br.*

637. PENTARRHINUM, E. Mey. (6810).

2233. insipidum *E. Mey.*

638. CYNANCHUM, Linn. (6834).

2234. africanum *Hoffmg.*
2235. capense *Thunb.*
2236. virens *Dietr.*

639. TYLOPHORA, R. Br. (6899).

2237. lycioides *Dcsne.*

640. SARCOSTEMMA, R. Br. (6849).

2238. viminale *R. Br.*

641. SPHAEROCODON, Benth. (6896).

2239. obtusifolium *Benth.*

642. MARSDENIA, R. Br. (6911).

2240. floribunda *N. E. Br.*

643. FOCKEA, Endl. (6924).

2241. angustifolia *K. Schum.*
2242. sessiliflora *Schltr.*

644. GYMNEMA, R. Br. (6891).

2243. sylvestre *R. Br.*

645. ORTHANTHERA, Wight. (6862).

2244. jasminiflora *N. E. Br.*

646. SISYRANTHUS, E. Mey. (6861).

2245. Huttonæ *S. Moore.*
2246. Randii *S. Moore.*

647. TENARIS, E. Mey. (6921).

2247. chlorantha *Schltr.*
2248. filifolia *N. E. Br.*
2249. rubella *E. Mey.*
2249A. simulans *N. E. Br.*

648. MACROPETALUM, Burch. (6865).

2249B. Burchellii *Dcsne.*
  a. grandiflora *N. E. Br.*

138. ASCLEPIADACEÆ—*cont.*

649. Riocreuxia, Dcsne. (6875).

2250. picta *Schltr.*
2251. polyantha *Schltr.*
2252. torulosa *Dcsne.*
a. longidens *N. E. Br.*
b. obsoleta *N. E. Br.*

650. Ceropegia, Linn. (6874).

2253. barbertonensis *N. E. Br.*
2254. brachyceras *Schltr.*
2255. Conrathii *Schltr.*
2256. crispata *N. E. Br.*
2257. euryacme *Schltr.*
2258. Galpinii *Schltr.*
2259. Meyeri *Dcsne.*
2260. pachystelma *Schltr.*
2261. Rendallii *N. E. Br.*
2262. setifera *Schltr.*
2263. tomentosa *Schltr.*

651. Brachystelma, R. Br. (6870).

2264. Barberiæ *Harv.*
2265. circinatum *E. Mey.*
2266. fœtidum *Schltr.*
2267. Galpinii *N. E. Br.*
b. pallidum *N. E. Br.*
2268. longifolium *N. E. Br.*
2269. macropetalum *N. E. Br.*
2270. oianthum *Schltr.*
2271. pygmæum *N. E. Br.*
b. breviflorum *N. E. Br.*
2272. ramosissimum *N. E. Br.*
2273. villosum *N. E. Br.*

652. Huernia, R. Br. (6887).

2274. humilis *Harv.*
2275. hystrix *N. E. Br.*
2276. lœseneriana *Schltr.*
2277. Kirkii *N. E. Br.*
2278. stapelioides *Schltr.*

653. Caralluma, R. Br. (6884).

2279. Leendertziæ *N. E. Br.*
2280. lutea *N. E. Br.*
2281. melanantha *N. E. Br.*

654. Stapelia, Linn. (6885).

2282. furcata *N. E. Br.*
2283. gigantea *N. E. Br.*
2284. Leendertziæ *N. E. Br.*
2285. nobilis *N. E. Br.*

655. Duvalia, Haw. (6883).

2286. transvaalensis *Schltr.*

656. Pergularia, Linn. (6917).

2287. extensa *N. E. Br.*

657. Tavaresia, Welw. (6880).

2288. Barklyi *N. E. Br.*

139. CONVOLVULACEÆ, Vent. (249)

658. Cuscuta, (Tourn.) Linn. (6968).

2289. appendiculata *Engelm.*
2290. cassytoides *Nees.*
2291. *epilinum* Weihe.
2292. *Trifolii* Bab.

659. Falkia, Linn. f. (6972).

2293. oblonga *Bernh.*
b. minor *C. H. Wght.*
2294. (repens *Linn.* ?)

660. Evolvulus, Linn. (6973).

2295. alsinoides *Linn.*
b. linifolia *Baker.*

661. Bonamia, Thou. (6979).

2296. capensis (*Baker*) *Peter.*
b. oligotricha (*Baker*) *Peter.*
2297. suffruticosa (*Schinz.*) *Peter.*
b. hirsutissima (*Hall. f.*) *Peter.*

662. Aniseia, Choisy. (6992).

2298. calycina *Choisy.*

663. Convolvulus, (Tourn.) Linn. (6993).

2299. *arvensis* Linn.
2300. bœdeckerianus *Peter.*
2301. capensis *Burm.*
a. plicatus *Baker.*
2302. farinosus *Linn.*
2303. hastatus *Thunb.*
b. natalensis *Baker.*
2304. inconspicuus *Hall. f.*
2305. liniformis *Rendle.*
2306. natalensis *Bernh.*
a. angustifolius *C. H. Wght*
b. integrifolius *C. H. Wght.*
2307. ocellatus *Hook.*
2308. phyllosepalus *Hall. f.*
2309. sagittatus *Thunb.*
b. latifolius *C. H. Wght.*
c. linearifolius *Hall. f.*
2310. Thunbergii *R. & S.*
2311. transvaalensis *Schltr.*
2312. ulosepalus *Hall. f.*

664. Merremia, Dennst. (6997).

2313. palmata *Hall. f.*

665. Ipomœa, Linn. (7003).

2314. adenioides *Schinz.*
2315. albivenia *Sweet.*
2316. angustifolia *Jacq.*
2317. angustisecta *Engl.*
2318. argyreioides *Choisy.*
2319. Atherstonei *Baker.*
2320. bathycolpos *Hall. f.*
2321. bellecomans *Rendle.*
2322. calystegioides *E. Mey.*
2323. chloroneura *Hall. f.*
2324. convolvuloides *Hall. f.*

139. CONVOLVULACEÆ—*cont.*

665. Ipomœa—*cont.*
    2325. crassipes *Hook.*
        a. genuina *Hall. f.*
        b. longepedunculata *Hall. f.*
        c. thunbergioides *Hall. f.*
        d. strigosa *Hall. f.*
        e. grandifolia *Hall. f.*
        f. ovata *Hall. f.*
    2326. dissecta *Willd.*
    2327. fragilis *Choisy.*
    2328. grandifolia *Hall. f.*
    2329. Greenstockii *Rendle.*
    2330. mesentericoides *Hall. f.*
    2331. oblongata *E. Mey.*
        b. hirsuta (*E. Mey.*) *Rendle.*
    2333. obscura *Ker.*
        b. longipes *C. H. Wght.*
    2334. Œnotheræ *Hall. f.*
    2335. Ommannei *Rendle.*
    2336. orthipomœa *Linn.*
    2337. ovata *E. Mey.*
    2338. Papilio *Hall. f.*
    2339. petunioides *Baker.*
    2340. pileata *Roxb.*
    2341. plantaginea *Hall. f.*
    2342. *purpurea* Roth.
    2343. quinquefolia *Hochst.*
    2344. robertsiana *Rendle.*
    2345. sarmentacea *Rendle.*
    2346. simplex *Thunb.*
    2347. strigosa *Hall. f.*
    2348. thunbergioides *Hall. f.*
    2349. Wightii *Choisy.*
    2350. xiphosepala *Baker.*

140. BORRAGINACEÆ, Lindl. (252).

666. Cordia, Linn. (7038).
    2351. abyssinica *R. Br.*

667. Ehretia, Linn. (7043).
    2352. amœna *Klotzsch.*
    2353. hottentotica *Burch.*

668. Heliotropium, (Tourn.) Linn. (7052).
    2354. Curassavicum *Linn.*
    2355. lineare *C. H. Wght.*
    2356. Nelsoni *C. H. Wght.*
    2357. ovalifolium *Forsk.*
    2358. strigosum *Willd.*
    2359. tuberculosum (*Cham.*) *Guerke.*

669. Trichodesma, R. Br. (7056).
    2360. angustifolium *Harv.*
    2361. physaloides *A. DC.*

670. Cynoglossum, (Tourn.) Linn. (7064).
    2362. enerve *Turcz.*
    2363. *micranthum* Desf.

671. Lappula, (Riv.) Mœnch. (7073).*
    2364. *Myosotis* Mœnch.
    2365. *texana* (Scheele) Britton.

140. BORRAGINACEÆ—*cont.*

672. Anchusa, Linn. (7093).*
    2366. *riparia* DC.

673. Myosotis, (Tourn.) Linn. (7100).
    2367. amplexicaulis *A. DC.*
    2368. *sylvatica* Hoffm.

674. Mertensia, Roth. (7102).*
    2369. *siberica* Don.

675. Lithospermum, (Tourn.) Linn. (7109).
    2370. *arvense* Linn.
    2371. cinereum *DC.*
    2372. *officinale* Linn.

676. Lobostemon, Lehm. (7117).
    2373. sp.

677. Echium, Linn. (7118).*
    2374. (*violaceum* Linn. ?)

141. VERBENACEÆ, Juss. (253).

678. Verbena, Linn. (7138).*
    2375. *officinalis* Linn.
    2376. *venosa* Gill. & Hook.
    2377. *bonariensis* Linn.

679. Lantana, Linn. (7144).
    2378. galpiniana *H. H. W. Pears.*
    2379. salvifolia *Jacq.*

680. Lippia, Houst. (7145).
    2380. *asperifolia* Rich.
    2381. *nodiflora* Rich.
    2382. pedunculata *H. H. W. Pears.*
    2383. pretoriensis *H. H. W. Pears.*
    2384. Rehmanni *H. H. W. Pears.*
    2385. scaberrima *Sond.*
    2386. Wilmsii *H. H. W. Pears.*

681. Bouchea, Cham. (7148).
    2387. cuneifolia *Schauer.*
    2388. hederacea *Sond.*
    2389. incisa *H. H. W. Pears.*
    2390. latifolia *Harv.*
        b. glabrescens *H. H. W. Pears.*
    2391. longipetala *H. H. W. Pears.*
    2392. pinnatifida *Schauer.*
    2393. pumila *Schauer.*
    2394. Schlechteri *Guerke.*
    2395. Wilmsii *Guerke.*

682. Priva, Adans. (7153).
    2396. leptostachya *Juss.*

683. Duranta, Linn. (7162).*
    2397. *Plumieri* Jacq.

684. Vitex, (Tourn.) Linn. (7186).
    2398. reflexa *H. H. W. Pears.*
    2399. Rehmanni *Guerke.*
    2400. Wilmsii *Guerke.*
    2401. Zeyheri *Sond.*
        b. brevipes *Sond.*

141. VERBENACEÆ—*cont.*

685. CLERODENDRON, Linn. (7191).

2402. glabrum *E. Mey.*
2403. hirsutum (*Hochst.*) *H. H. W. Pears.*
2404. myricoides *R. Br.*
b. cuneatum *H. H. W. Pears.*
2405. Rehmanni *Guerke.*
2406. Schlechteri *Guerke.*
2407. simile *H. H. W. Pears.*
2408. triphyllum (*Harv.*) *H. H. W Pears.*
2409. Wilmsii *Guerke.*

142. LABIATÆ, B. Juss. (254).

686. BECIUM, Lindl. (—).

2410. obovatum *N. E. Br.*
b. hians *N. E. Br.*
c. Galpini *N. E. Br.*
2411. angustifolium *N. E. Br.*

687. OCIMUM, Linn. (7366).

2412. *americanum* Linn.
2413. filiforme *Guerke.*
2414. fruticulosum *Burch.*
2415. simile *N. E. Br.*
2416. suave *Willd.*

688. ORTHOSIPHON, Benth. (7367).

2417. affinis *N. E. Br.*
2418. albiflorus *N. E. Br.*
2419. bracteosus *Baker.*
2420. canescens *Guerke.*
2421. decipiens *N. E. Br.*
2422. foliosus *N. E. Br.*
2423. Holubii *N. E. Br.*
2424. humilis *N. E. Br.*
2425. labiatus *N. E. Br.*
2426. Muddii *N. E. Br.*
2427. persimilis *N. E. Br.*
2428. Pretoriæ *Guerke.*
2429. Rehmannii *Guerke.*
2430. Rogersii *N. E. Br.*
2431. serratus *Schltr.*
2432. subvelutinus *Guerke.*
2433. teucriifolius *N. E. Br.*
b. galpiniana *N. E. Br.*
2434. Thorncroftii *N. E. Br.*
2435. transvaalensis *Schltr.*
2436. varians *N. E. Br.*
2437. Wilmsii *Guerke.*

689. SYNCLOSTEMON, E. Mey. (7359).

2438. concinnus *N. E. Br.*

690. PLECTRANTHUS, L'Hérit. (7350).

2439. arthropodus *Briq.*
2440. Bolusii *T. Cooke.*
2441. calycinus *Benth.*
2442. ciliatus *E. Mey.*
2443. esculentus *N. E. Br.*
2444. floribundus *N. E. Br*
2445. fruticosus *L'Hérit.*

142. LABIATÆ—*cont.*

690. PLECTRANTHUS—*cont.*

2446. Galpinii *Schltr.*
2447. grandidentatus *Guerke.*
2448. hirtus *Benth.*
2449. hylophilus *Guerke.*
2450. laxiflorus *Benth.*
2451. myrianthus *Briq.*
2452. neochilus *Schltr.*
2453. Rehmannii *Guerke.*
2454. tomentosus *Benth.*
2455. transvaalensis *Briq.*

691. COLEUS, Lour. (7355).

2456. Rehmanii *Briq.*
2457. Pentheri *Guerke.*

692. PYCNOSTACHYS, Hook. (7347).

2458. purpurascens *Briq.*
2459. reticulata *Benth.*
2460. urticifolia *Hook.*

693. ANISOCHILUS, Wall. (7348).

2461. africanus *Baker.*

694. GENIOSPORUM, Wall. (7363).

2462. angolense *Briq.*

695. ÆOLANTHUS, Mart. (7345).

2463. canescens *Guerke.*
2464. parvifolius *Benth.*
2465. Rehmannii *Guerke.*
2466. sericeus *Guerke.*

696. ENDOSTEMON, N. E. Br. (—).

2467. obtusifolius (*E. Mey.*) *N. E. Br.*

697. HYPTIS, Jacq. (7342).

2468. pectinata *Poit.*

698. HOSLUNDIA, Vahl. (7357).

2469. decumbens *Benth.*

699. IBOZA, N. E. Br. (7364).

2470. brevispicata *N. E. Br.*
2471. Galpini *N. E. Br.*
2472. riparia (*Hochst.*) *N. E. Br.*

700. MENTHA, (Tourn.) Linn. (7328).

2473. *aquatica* Linn.
2474. longifolia *Huds.*
2475. polyadena *Briq.*
2476. sp.

701. SATUREIA, Linn. (7305).

2477. biflora (*Benth.*) *Briq.*

702. SALVIA, (Tourn.) Linn. (7290).

2478. aurita *Linn. f.*
2479. Radula *Benth.*
2480. rugosa *Thunb.*
2481. runcinata *Linn. f.*
b. nana *Skan.*
2482. sisymbrifolia *Skan.*
2483. stenophylla *Burch.*
2484. Woodii *Guerke.*

142. LABIATÆ—*cont.*

703. Acrotome, Benth. (7236).
   2485. hispida *Benth.*
   2486. inflata *Benth.*
   2487. Thorncroftii *Skan.*

704. Stachys, (Tourn.) Linn. (7281).
   2488. caffra *E. Mey.*
   2489. erectiuscula *Guerke.*
   2490. Galpini *Briq.*
   2491. grandifolia *E. Mey.*
   2492. hyssopoides *Burch.*
   2493. nigricans *Benth.*
   2494. Rehmannii *Skan.*
   2495. sessilis *Guerke.*
   2496. simplex *Schltr.*
   2497. spathulata *Burch.*
   2498. transvaalensis *Guerke.*
   2499. Wilmsii *Guerke.*

705. Leucas, Burm. (7268).
   2500. *martinicensis* R. Br.
   2501. *neuflizeana* Courb.
   2502. sexdentata *Skan.*

706. Lasiocorys, Benth. (—).
   2503. capensis *Benth.*

707. Leonotis, R. Br. (7264).
   2504. Bachmannii *Guerke.*
   2505. brevipes *Skan.*
   2506. dysophylla *Benth.*
   2507. Leonurus *R. Br.*
   2508. malacophylla *Guerke.*
   2509. microphylla *Skan.*

708. Tinnea, Kotsch. & Peyr. (7213).
   2510. Galpini *Briq.*

709. Teucrium, (Tourn.) Linn. (7212).
   2511. capense *Thunb.*

710. Ajuga, Linn. (7211).
   2512. Ophrydis *Burch.*

143. SOLANACEÆ, Hall. (256).

711. Nicandra, Adans. (7377).*
   2513. *physaloides* Gærtn.

712. Lycium, Linn. (7379).
   2514. hirsutum *Dunal.*
   2515. oxycladum *Miers.*
   2516. tenue *Willd.*
      b. Sieberi *Dunal.*

713. Withania, Pauquy. (7400).*
   2517. *somnifera* Dunal.

714. Physalis, Linn. (7401).*
   2518. *ixocarpa* Brot.
   2519. *minima* Linn.
   2520. *peruviana* Linn.
   2521. *pubescens* Linn.

143. SOLANACEÆ—*cont.*

715. Solanum, (Tourn.) Linn. (7407).
   2522. *aculeatissimum* Jacq.
   2523. capense *Linn.*
   2524. coccineum *Jacq.*
   2525. giganteum *Jacq.*
   2526. *incanum* Linn.
   2527. *indicum* Linn.
   2528. *nigrum* Linn.
   2529. panduræforme *E. Mey.*
   2530. *pseudocapsicum* Linn.
   2531. rigescens *Jacq.*
   2532. *sodomeum* Dunal.
      a. *Hermanni* Dunal.
   2533. supinum *Dunal.*
   2534. *villosum* Mœnch.

716. Datura, Linn. (7415).*
   2535. *Stramonium* Linn.
   2536. *Tatula* Linn.

717. Nicotiana, Linn. (7434).*
   2537. *glauca* R. Graham.
   2538. *Tabacum* Linn.

144. SCROPHULARIACEÆ, Lindl. (257).

718. Aptosimum, Burch. (7467).
   2539. decumbens *Schinz.*
   2540. depressum *Burch.*
   2541. elongatum *Engl.*
   2542. indivisum *Burch.*
   2543. lineare *Marloth & Engl.*
      b. Randii (*S. Moore*) *E. Weber.*
   2544. nanum *Engl.*
      b. glabrum *E. Weber.*
   2545. transvaalense *E. Weber.*

719. Peliostomum, E. Mey. (7468).
   2546. calycinum *N. E. Br.*
   2547. leucorrhizum *E. Mey.*

720. Nemesia, Vent. (7476).
   2548. anisocarpa *E. Mey.*
   2549. cynanchifolia *Benth.*
   2550. fœtens *Vent.*
      b. latifolia *Hiern.*
   2551. linearis *Vent.*

721. Diclis, Benth. (7477).
   2552. petiolaris *Benth.*
   2553. reptans *Benth.*

722. Linaria, (Tourn.) Mill. (7480).*
   2554. *vulgaris* Mill.

723. Halleria, Linn. (7493).
   2555. lucida *Linn.*

724. Teedia, Rud. (7494).
   2556. lucida *Rud.*

725. Phygelius, E. Mey. (7495).
   2557. capensis *E. Mey.*
   2558. æqualis *Harv.*

144. SCROPHULARIACEÆ—*cont.*

726. BOWKERIA, Harv. (7500).
2559. cymosa *Linn.*

727. MANULEA, Linn. (7517).
2560. crassifolia *Benth.*
2561. limonioides *Conrath.*
2562. paniculata *Benth.*
2563. parviflora *Benth.*

728. CHÆNOSTOMA, Benth. (7518).
2564. sp.

729. SUTERA, Roth. (7519).
2565. accrescens *Hiern.*
2566. arcuata *Hiern.*
2567. atropurpurea *Hiern.*
2568. aurantiaca *Hiern*
2569. Bolusii *Hiern.*
2570. brunnea *Hiern.*
  b. macrophylla *Hiern.*
2571. burkeana *Hiern.*
2572. cærulea *Hiern.*
2573. campanulata *O. Ktze.*
2574. crassicaulis *Hiern.*
2575. floribunda *O. Ktze.*
2576. grandiflora *Hiern.*
2577. micrantha *Hiern.*
2578. halimifolia *O. Ktze.*
2579. levis *Hiern.*
2580. luteiflora *Hiern.*
2581. macleana *Hiern.*
2582. multifida *Benth.*
2583. neglecta *Hiern.*
2584. palustris *Hiern.*
2585. pinnatifida *O. Ktze.*
  a. macrophylla *Hiern.*
  b. subbipinnatisecta *Hiern.*
  c. viscoso-pubescens *Hiern.*
2586. polyantha *O. Ktze.*

730. SPHENANDRA, Benth. (7520).
2587. viscosa *Benth.*

731. PHYLLOPODIUM, Benth. (7521).
2588. calvum *Hiern.*
2589. glutinosum *Schltr.*
2590. rupestre *Hiern.*

732. POLYCARENA, Benth. (7522).
2591. foliosa *Benth.*
2592. transvaalensis *Hiern.*

733. ZALUZIANSKYA, F. W. Schmidt. (7523)
2593. capensis *Walp.*
2594. Katherinæ *Hiern.*
2595. lychnidea *Walp.*
2596 maritima *Walp.*
2597. ovata *Walp.*
2598. spathacea *Benth.*

734. MIMULUS, Linn. (7524).
2599. gracilis *R. Br.*

144. SCROPHULARIACEÆ—*cont.*

735. LIMOSELLA, Linn. (7558).
2600. aquatica *Linn.*
  b. tenuifolia *Hook.*
2601. capensis *Thunb.*
2602. grandiflora *Benth.*
2603. major *Diels.*
2604. tenuifolia *Nutt.*

736. CRATEROSTIGMA, Hochst. (7560).
2605. plantagineum *Hochst.*
2606. Wilmsii *Engl.*

737. TORENIA, Linn. (7561).
2607. spicata *Engl.*

738. ILYSANTHES, Raf. (7564).
2608. Bolusii *Hiern.*
2609. Muddii *Hiern.*
2610. nana *Engl.*
2611. riparia *Raf.*
2612. Schlechteri *Hiern.*
2613. Wilmsii *Engl.*

739. HEBENSTREITIA, Linn. (7566).
2614. comosa *Hochst.*
2615. dentata *Linn.*
2616. elongata *Bolus.*
2617. fruticosa *Sims.*
2618. integrifolia *Linn.*
  b. dentata *Choisy.*
2619. polystachya *Harv.*
2620. Rehmannii *Rolfe.*

740. SELAGO, Linn. (7568).
2621. aggregata *Rolfe.*
2622. Atherstonei *Rolfe.*
2623. Burkei *Rolfe.*
2624. capitellata *Schltr.*
2625. compacta *Rolfe.*
2626. elata *Rolfe.*
2627. hyssopifolia *E. Mey.*
2628. longituba *Rolfe.*
2629. lydenburgensis *Rolfe.*
2630. Muddii *Rolfe.*
2631. Nelsoni *Rolfe.*
2632. Rehmanni *Rolfe.*
2633. Sandersoni *Rolfe.*
2634. swaziensis *Rolfe.*
2635. transvaalensis *Rolfe.*
2636. villosa *Rolfe.*
2637. Wilmsii *Rolfe.*

741. WALAFRIDA, E. Mey. (—).
2638. densiflora *Rolfe.*
2639. paniculata *Rolfe.*
2640. tenuifolia *Rolfe.*

742. VERONICA, (Tourn.) Linn. 7579).
2641. Anagallis *Linn.*
  b. aquatica *Berg.*
2642. *Tournefortii* Gmel.

144. SCROPHULARIACEÆ—*cont.*

743. Melasma, Berg. (7597).
2643. barbatum *Hiern.*
2644. capense *Hiern.*
2645. indicum *Wettst.*
2646. orobanchoides *Engl.*
2647. scabrum *Berg.*
b. ovatum *Hiern.*
2648. sessiliflorum *Hiern.*

744. Gerardiina, Engl. (7605).
2649. angolensis *Engl.*

745. Graderia, Benth. (7614).
2650. scabra *Benth.*
2651. subintegra *Mast.*

746. Sopubia, Buch.-Ham. (7616).
2652. cana *Harv.*
b. glabrescens *Diels.*
2653. dregeana *Benth.*
2654. Eenii *S. Moore.*
2655. fastigiata *Hiern.*
2656. simplex *Hochst.*
2657. trifida *Hamilt.*

747. Buchnera, Linn. (7622).
2658. brevibractealis *Hiern.*
2659. dura *Benth.*
2660. glabrata *Benth.*
2661. reducta *Hiern.*

748. Cycnium, E. Mey. (7623).
2662. adonense *E. Mey.*
2663. racemosum *Benth.*
2664. tubatum *Benth.*

749. Rhamphicarpa, Benth. (7624).
2665. fistulosa *Benth.*
2666. tubulosa *Benth.*

750. Striga, Lour. (7625).
2667. elegans *Benth.*
2668. hirsuta *Benth.*
2669. lutea *Lour.*
2670. orobanchoides *Benth.*
2671. Thunbergii *Benth.*

751. Harveya, Hook. (7627).
2672. Huttoni *Hiern.*
2673. purpurea *Harv.*
2674. Randii *Hiern.*
2675. scarlatina *Hook.*
2676. speciosa *Bernh.*

145. BIGNONIACEÆ, Pers. (258).

752. Tecomaria, Spach. (7713).
2677. capensis *Spach.*

753. Catophractes, D. Don. (7723).
2678. Alexandri *D. Don.*

754. Kigelia, DC. (7761).
2679. pinnata *DC.*

146. PEDALIACEÆ, Lindl. (259).

755. Pterodiscus, Hook. (7769).
2680. lividus *Hook.*
2681. speciosus *Hook.*

756. Harpagophytum, DC. (7771).
2682. Pegleræ *Stapf.*
2683. procumbens *DC.*
2684. Zeyheri *Dcsne.*

757. Holubia, Oliv. (7772).
2685. saccata *Oliv.*

758. Sesamum, Linn. (7777).
2686. capense *Burm.*
2687. *indicum* Linn.

759. Ceratotheca, Endl. (7778).
2688. kraussiana *Burch.*
2689. triloba *E. Mey.*

760. Pretrea, J. Gay. (7780).
2690. zanguebarica *J. Gay.*

147. MARTYNIACEÆ, Houst. (260)

761. Proboscidea, Mœnch. (7785).*
2691. *Jussieui* Steud.
2692. *lutea* (Lindl.) Stapf.

148. GESNERACEÆ, Nees. (262).

762. Streptocarpus, Lindl. (7823).
2693. Armitagei *Bak. f. & S. Moore.*
2694. cyaneus *S. Moore.*
2695. Davyi *S. Moore.*
2696. Dunnii *Hook. f.*
2697. Dyeri *W. Wats.*
2698. Galpini *Hook. f.*
2699. Haygarthii *N. E. Br.*
2700. Junodii *Beauv.*
2701. lutea *C. B. Cl.*
2702. micrantha *C. B. Cl.*
2703. Muddii *C. B. Cl.*
2704. parviflorus *Drège.*
2705. Rexii *Lindl.*
2706. Vandeleuri *Bak. f. & S. Moore.*
2707. Wilmsii *Engl.*

149. LENTIBULARIACEÆ, Lindl. (264).

763. Genlisea, A. St. Hil. (7899).
2708. hispidula *Stapf.*

764. Utricularia, Linn. (7901).
2709. diploglossa *Welw.*
2710. Ecklonii *Spreng.*
2711. exoleta *R. Br.*
2712. Kirkii *Stapf.*
2713. livida *E. Mey.*
b. Engleri *Stapf.*

149. LENTIBULARIACEÆ—*cont.*

764. Utricularia—*cont.*

2714. prehensilis *E. Mey.*
2715. sanguinea *Welw.*
2716. stellaris *Linn.*
2717. transrugosa *Stapf.*
2718. tribracteata *Hochst.*

150. ACANTHACEÆ, Juss. (266).

765. Thunbergia, Retz. (7914).

2719. amœna *C. B. Cl.*
2720. aspera *Nees.*
a. parvifolia *Sond.*
2721. atriplicifolia *E. Mey.*
2722. Bachmanni *Lindau.*
b. minor *C. B. Cl.*
2723. Galpini *Lindau.*
2724. hirta *Lindau.*
2725. natalensis *Hook.*
2726. neglecta *Sond.*
2727. stenophylla *C. B. Cl.*
2728. xanthotricha *Lindau.*

766. Hygrophila, R. Br. (7926).

2729. spinosa *T. Anders.*

767. Phaulopsis, Willd. (7932).

2730. longifolia *T. Thoms.*
2731. parviflora *Willd.*

768. Petalidium, Nees. (7934).

2732. oblongifolium *C. B. Cl.*

769. Dyschoriste, Nees. (7939).

2733. Burchellii *O. Ktze.*
2734. Fischeri *Lindau.*
2735. mutica *C. B. Cl.*
2736. transvaalensis *C. B. Cl.*

770. Chætacanthus, Nees. (7941).

2737. Burchellii *Nees.*
2738. costatus *Nees.*
2739. glandulosus *Nees.*

771. Ruelliopsis, C. B. Cl. (7946).

2740. setosa *C. B. Cl.*

772. Ruellia, (Plum.) Linn. (7965).

2741. ovata *Thunb.*
2742. patula *Jacq.*
2743. stenophylla *C. B. Cl.*

773. Glossochilus, Nees. (7970).

2744. parviflorus *Hutch.*

774. Crabbea, Harv. (7972).

2745. acaulis *N. E. Br.*
2746. angustifolia *Nees.*
2747. Galpini *C. B. Cl.*
2748. hirsuta *Harv.*
2749. nana *Nees.*
2750. reticulata *C. B. Cl.*
2751. robusta *N. E. Br.*

150 ACANTHACEÆ—*cont.*

775. Barleria Linn. (7973).

2752. affinis *C. B. Cl.*
2753. barbata *E. Mey.*
2754. cinereicaulis *N. E. Br.*
2755. crossandriformis *C. B. Cl.*
2756. elegans *S. Moore.*
2757. Galpini *C. B. Cl.*
2758. Gueinzii *Sond.*
2759. heterotricha *Lindau.*
2760. Holubii *C. B. Cl.*
2761. macrostegia *Nees.*
2762. meyeriana *Nees.*
2763. obtusa *Nees.*
2764. orbicularis *Hochst.*
2765. ovata *E. Mey.*
2766. pretoriensis *C. B. Cl.*
2767. Prionitis *Linn.*
2768. Rehmanni *C. B. Cl.*
2769. subvolubilis *C. B. Cl.*
2770. Virgula *C. B. Cl.*
2771. Wilmsii *Lindau.*

776. Sclerochiton, Harv. (7978).

2772. harveyanus *Nees.*

777. Blepharis, Juss. (7980).

2773. angusta *T. Anders.*
2774. boerhaaviæfolia *Pers.*
2775. dilatata *C. B. Cl.*
b. explicatior *C. B. Cl.*
2776. diversispina *C. B. Cl.*
2777. hirtinervia *T. Anders.*
2778. inæqualis *C. B. Cl.*
2779. innocua *C. B. Cl.*
2780. molluginifolia *Pers.*
2781. obmitrata *C. B. Cl.*
2782. saturejæfolia *Pers.*
2783. serrulata *Fical. & Hiern.*
2784. setosa *Nees.*
2785. squarrosa *T. Anders.*
2786. Stainbankiæ *C. B. Cl.*
2787. subvolubilis *C. B. Cl.*
2788. uniflora *C. B. Cl.*

778. Crossandra, Salisb. (7985).

2789. Greenstockii *S. Moore.*

779. Asystasia, Blume. (8007).

2790. subbiflora *C. B. Cl.*

780. Peristrophe, Nees. (8026).

2791. bicalyculata *Nees.*

781. Macrorungia, C. B. Cl. (8030).

2792. longistrobus *C. B. Cl.*

782. Dicliptera, Juss. (8031).

2793. clinopodia *Nees.*
b. minor *S. Moore.*
2794. minor *C. B. Cl.*
2795. mossambicensis *Klotzsch.*
2796. transvaalensis *C. B. Cl.*

150. ACANTHACEÆ—*cont.*

783. HYPOESTES, Soland. (8032).

2797. antennifera *S. Moore.*
2798. aristata *R. Br.*
2799. phaylopsoides *S. Moore.*
2800. triflora *R. & S.*
2801. verticillaris *R. Br.*

784. MACKAYA, Harv. (8039).

2802. bella *Harv.*

785. SIPHONOGLOSSA, Oerst. (8049).

2803. linifolia *C. B. Cl.*

786. RUTTYA, Harv. (8063).

2804. ovata *Harv.*

787. ISOGLOSSA, Oerst. (8079).

2805. Bolusii *C. B. Cl.*
2806. Grantii *C. B. Cl.*
2807. Woodii *C. B. Cl.*

788. JUSTICIA, (Houst.) Linn. (8094).

2808. anagalloides *T. Anders.*
2809. anselliana *T. Anders.*
2810. Betonica *Linn.*
2811. campylostemon *T. Anders.*
2812. cheiranthifolia *C. B. Cl.*
2813. flava *Vahl.*
2814. incerta *C. B. Cl.*
2815. matammensis *Oliv.*
2816. natalensis *Nees.*
2817. odora *Vahl.*
2818. pallidior *C. B. Cl.*
2819. pulegioides *E. Mey.*
2820. spergulæfolia *T. Anders.*
2821. uninervis *S. Moore.*

789. MONECHMA, Hochst. (—).

2822. bracteatum *Hochst.*
2823. fimbriatum *C. B. Cl.*
2824. divaricatum *C. B. Cl.*
2825. (namaënse *C. B. Cl.* ?)
2826. terminale *S. Moore.*

151. PLANTAGINACEÆ, Lindl. (269).

790. PLANTAGO, (Tourn.) Linn. (8116).

2827. dregeana *Presl.*
2828. *lanceolata* Linn.
2829. longissima *Dcsne.*
2830. *major* Linn.

152. RUBIACEÆ, B. Juss. (270).

791. OLDENLANDIA, Linn. (8136).

2831. amatymbica (*Hochst.*) *K. Schum.*
2832. Bojeri *Hiern.*
2833. caffra *E. & Z.*
2834. geminiflora (*Sond.*) *K. Schum.*
2835. herbacea *Roxb.*
2836. Heynei (*R. Br.*) *G. Don.*
2837. hirtula (*Harv.*) *O. Ktze.*
2838. natalensis (*Hochst.*) *O. Ktze.*
2839. stricta (*DC.*) *K. Schum.*
2840. thymifolia (*Presl.*) *O. Ktze.*

152. RUBIACEÆ—*cont.*

792. PENTAS, Benth. (8154).

2841. Woodii *Scott-Ell.*

793. ADINA, Salisb. (8226).

2842. microcephala *Hiern.*
  a. Galpinii (*Oliv.*) *Hiern.*

794. CEPHALANTHUS, Linn. (8230).

2843. natalensis *Oliv.*

795. BURCHELLIA, R. Br. (8281).

2844. capensis *R. Br.*

796. RANDIA, Linn. (8283).

2845. bellatula *K. Schum.*
2846. dumetorum *Lam.*

797. GARDENIA, Ellis. (8285).

2847. cornuta *Hemsl.*
2848. gerrardiana *Sond. & Harv.*
2849. Neuberia *E. & Z.*
2850. obovata *Stapf.*
2851. Rothmannia *Linn. f.*
2852. Saundersiæ *N. E. Br.*

798. OXYANTHUS, DC. (8293).

2853. Gerrardi *Sond.*
2854. (latifolius *Sond.* ?)

799. TRICALYSIA, A. Rich. (8308).

2855. capensis (*Meisn.*) *Sim.*
2856. Galpinii *Schinz.*
2857. (jasminiflora *Benth. & Hook.* ?)
2858. lanceolata (*Sond.*) *K. Schum.*
2859. pavettoides (*Harv.*) *K. Schum.*

800. PENTANISIA, Harv. (8348).

2860. variabilis *Harv.*
  b. glaucescens *Harv.*
  c. latifolia *Hochst.*

801. VANGUERIA, Juss. (8351).

2861. edulis *Vahl.*
2862. euonymoides *Schweinf.*
2863. infausta *Burch.*
2864. longipes *Conrath.*
2865. macrocalyx *Sond.*
2866. parvifolia *Sond.*
2867. pygmæa *Schltr.*
2868. setosa *Conrath.*

802. PLECTRONIA, Linn. (8352).

2869. chamædendron *O. Ktze.*
2870. ciliata *Sond.*
2871. Gilfillani *N. E. Br.*
2872. Gueinzii (*Sond.*) *Szysz.*
2873. mundtiana (*Ch. & Schl.*) *Pappe.*
2874. transvaalensis (*S. Moore*) *K Schum.*
2875. (ventosa *Hochst.* ?)

152. RUBIACEÆ—*cont.*

803. PACHYSTIGMA, Hochst. (8359).
2876. Cienkowskii (*Schweinf.*) *K. Schum.*
2877. latifolium *Sond.*
2878. venosum *Hochst.*
2879. Zeyheri *Sond.*
2880. sp. nov.

804. PAVETTA, Linn. (8383).
2881. caffra *Linn. f.*
b. pubescens *Sond.*
2882. Cooperi *Harv. & Sond.*
2883. disarticulata *Galpin.*
2884. lanceolata *Eckl.*
2885. microlancea *K. Schum.*
2886. schumanniana *F. Hoffm.*
2887. Zeyheri *Sond.*

805. GRUMILEA, Gærtn. (8402).
2888. capensis *Sond.*

806. GALOPINA, Thunb. (8435).
2889. circæoides *Thunb.*
2890. oxyspermum *Steud.*

807. ANTHOSPERMUM, Linn. (8438).
2891. Burkei *Sond.*
2892. calycophyllum *Sond.*
2893. hispidulum *E. Mey.*
2894. pumilum *Sond.*
2895. rigidum *E. & Z.*

808. OTIOPHORA, Zucc. (8450).
2896. cupheoides *N. E. Br.*

809. RICHARDSONIA, Kunth. (8464).*
2897. *scabra* Linn.

810. SPERMACOCE, Gærtn. (8475).
2898. Ruelliæ *DC.*

811. GALIUM, Linn. (8486).
2899. capense *Thunb.*
2900. horridum *Thunb.*
2901. rotundifolium *Linn.*
b. hirsutum *Harv.*

812. RUBIA, (Tourn.) Linn. (8489).
2902. cordifolia *Linn.*
2903. petiolaris *DC.*

153. VALERIANACEÆ, Dumort. (273).

813. VALERIANA, (Tourn.) Linn. (8532).
2904. capensis *Thunb.*

154. DIPSACACEÆ, Lindl. (274).

814. DIPSACUS, Linn. (8540).*
2905. *fullonum* Linn.

154. DIPSACACEÆ—*cont.*

815. CEPHALARIA, Schrad. (8541).
2906. ustulata *R. & S.*

816. SCABIOSA, (Tourn.) Linn. (8546).
2907. Columbaria *Linn.*
a. dissecta *Sond.*

155. CUCURBITACEÆ, Hall. (275).

817. MELOTHRIA, Linn. (8562).
2908. punctata *Cogn.*

818. KEDROSTIS, Medik. (8568).
2909. africana (*Sond.*) *Cogn.*

819. MOMORDICA, (Tourn.) Linn. (8591).
2910. Balsamina *Linn.*
2911. clematidea *Sond.*
2912. fœtida *Sch. & Thon.*

820. CITRULLUS, Forsk. (8598).
2913. pubescens *Sond.*
2914. sessilifolia *Sond.*
2915. vulgaris *Schrad.*

821. CUCUMIS, (Tourn.) Linn. (8599).
2916. africanus *Linn. f.*
2917. dissectifolius *Naud.*
2918. heptadactylus *Naud.*
2919. hirsutus *Sond.*
2920. myriocarpus *Naud.*
2921. naudinianus *Sond.*
2922. Zeyheri *Sond.*

822. TROCHOMERIA, Hook. f. (8608).
2923. Garcini (*Sond.*) *B. & H.*
2924. Hookeri *Harv.*
2924A. macrocarpa *Harv.*

823. PEPONIUM, Engl. (8612).
2925. sp.

824. COCCINIA, Wight. & Arn. (8628).
2926. adoënsis *Cogn.*
2927. palmata *Cogn.*
2928. Rehmannii *Cogn.*
2929. natalensis (*Oliv.*) *Cogn.*
2930. Schinzii *Cogn.*

156. CAMPANULACEÆ, Juss. (276)

825. ROELLA, Linn. (8662).
2931. sp.

826. WAHLENBERGIA, Schrad. (8668).
2932. arenaria *A. DC.*
2933. banksiana *A. DC.*
2934. caledonica *Sond.*
2935. denudata *A. DC*
2936. depressa *Wood. & Evans.*
2937. epacridea *Sond.*
a. glabrata *Sond.*

156. CAMPANULACEÆ—*cont.*

826. WAHLENBERGIA—*cont.*
2938. juncea *Bolus.*
2939. pinifolia *N. E. Br.*
b. brevifolia *S. Moore.*
2940. subnuda *Conrath.*
2941. undulata *A. DC.*
2942. (virgata *Engl.* ?)
2943. Zeyheri *Eckl. & Zeyh.*

827. LIGHTFOOTIA, L'Hérit. (8670).
2944. capillaris *Buek.*
2945. denticulata *Sond.*
2946. Huttoni *Sond.*
2947. paniculata *Sond.*

828. CYPHIA, Berg. (8681).
2948. elata *Harv.*
2949. Gerrardi *Harv.*
2950. stenopetala *Diels.*

829. LOBELIA, Plum. (8694).
2951. anceps *Thunb.*
2952. decipiens *Sond.*
2953. depressa *Thunb.*
2954. Erinus *Linn.*
b. microdon *Linn.*
2955. leptocarpa *Griessel.*
2956. rosulata *S. Moore.*
2957. Sonderi *A. Zahlbr.*
2958. stellarioides *B. & H.*
2959. Zeyheri *Sond.*

830. MONOPSIS, Salisb. (8695).
2960. debilis *Presl.*
a. conspicua *Presl.*

157. COMPOSITÆ, Vaill. (280).

831. ETHULIA, Linn. f. (8734).
2961. conyzoides *Linn.*

832. BOTHRIOCLINE, Oliv. (8746).
2962. laxa *N. E. Br.*

833. VERNONIA, Schreb. (8751).
2963. Bainesii *Oliv. & Hiern.*
2964. corymbosa *Less.*
2965. fastigiata *Oliv. & Hiern.*
2966. Galpinii *Klatt.*
2967. Gerrardi *Harv.*
2968. hirsuta *Sch. Bip.*
2969. Kraussii *Sch. Bip.*
2970. monocephala *Harv.*
2971. natalensis *Sch. Bip.*
2972. oreophila *Bolus.*
2973. podocoma *Sch. Bip.*
2974. stæhelinoides *Harv.*
2975. steetziana *Oliv. & Hiern.*
2976. Sutherlandi *Harv.*

834. ADENOSTEMMA, Forst. (8785).
2977. caffrum *DC.*

157. COMPOSITÆ--*cont.*

835. AGERATUM, Linn. (8795).*
2978. *conyzoides* Linn.

836. EUPATORIUM, Linn. (8816).
2979. africanum *Oliv. & Hiern.*

837. MIKANIA, Willd. (8818).
2980. capensis *DC.*

838. ASTER, (Tourn.) Linn. (8900).
2981. hispidus *Baker.*
2982. filifolius *Vent.*
2983. Pegleræ *Bolus.*

839. ERIGERON, Linn. (8901).*
2984. *canadensis* Linn.

840. FELICIA, Cass. (8919).
2985. asper (*DC*) *O. Hoffm.*
2986. fascicularis *DC.*
2987. filifolia (*DC.*) *O. Hoffm.*
2988. muricata *Nees.*
2989. serrulata (*Harv.*) *O. Hoffm.*
b. xylophylla (*Klatt.*) *O. Hoffm.*

841. NIDORELLA, Cass. (8925).
2990. anomala *Steetz.*
2991. auriculata *DC.*
2992. conyzoides *Harv.*
2993. hottentotica *DC.*
b. lanata *DC.*
2994. pinnatilobata *DC.*
2995. polycephala *DC.*
2996. resedæfolia *DC.*

842. CONYZA, Linn. (8926).
2997. caffra *DC.*
2998. costata *Harv.*
2999. incisa *Ait.*
3000. ivæfolia *Less.*
b. scabrida *Harv.*
3001. pinnatilobata *DC.*
3002. podocephala *DC.*

843. NOLLETIA, Cass. (8929).
3003. ciliaris (*DC.*) *Steetz.*
3004. rarifolia (*Turcz.*) *Steetz.*

844. CHRYSOCOMA, Linn. (8930).
3005. coma-aurea *Linn.*
3006. tenuifolia *Berg.*
b. microcephala (*DC.*) *Harv.*

845. BRACHYLÆNA, R. Br. (8936).
3007. discolor *DC.*
3008. rotundata *S. Moore.*
3009. transvaalensis *Hutch.*

846. TARCHONANTHUS, Linn. (8937).
3010. camphoratus *Linn.*
b. litakunensis *Linn.*
3011. trilobus *DC.*

157. COMPOSITÆ—*cont.*

847. Blumea, DC. (8939).
3012. alata *DC.*
3013. gariepina *DC.*
3014. lacera *DC.*
3015. pterodonta *DC.*

848. Laggera, Sch. Bip. (8940).
3016. alata *Sch. Bip.*

849. Denekia, Thunb. (8949).
3017. capensis *Thunb.*

850. Epaltes, Cass. (8953).
3018. gariepina *Steetz.*
3019. scabra (*Harv.*) *O. Hoffm.*

851. Sphæranthus, Linn. (8955).
3020. peduncularis *DC.*

852. Ifloga, Cass. (8967).
3021. paronychioides *Fenzl.*

853. Amphidoxa, DC. (8972).
3022. sp.

854. Gnaphalium, Linn. (8992).*
3023. *luteo-album* Linn.
3024. *undulatum* Linn.

855. Cassinia, R. Br. (8994).
3025. phylicæfolia (*DC.*) *J. M. Wood.*

856. Helichrysum, Vaill. (9006).
3026. abyssinicum *Less.*
3027. adenocarpum *DC.*
3028. agrostophilum *Klatt.*
  b. nemorosum *Bolus.*
3029. allioides *Less.*
3030. appendiculatum *Less.*
3031. argyrosphærum *DC.*
3032. argyrophyllum *DC.*
3033. aureo-nitens *Sch. Bip.*
3034. cæspititium *Sond.*
3035. callicomum *Harv.*
3036. calocephalum *Klatt.*
3037. campaneum *Moore.*
3038. chionosphærum *DC.*
  b. angustifolium *Klatt.*
3039. Cooperi *Harv.*
3040. coriaceum *Sond.*
3041. cymosum *Less.*
3042. Davyi *S. Moore.*
3043. declinatum *Less.*
3044. decorum *DC.*
3045. ericæfolium *Less.*
3046. fulgidum *Willd.*
  b. monocephalum *DC.*
3047. Galpini *N. E. Br.*
3048. homalochrysum *S. Moore.*
3049. hypoleucum *Harv.*
3050. involucratum *Klatt.*
3051. Kraussii *Sch. Bip.*
3052. lanatum *Harv.*
3053. latifolium *Less.*

157. COMPOSITÆ—*cont.*

856. Helichrysum—*cont.*
3054. leiopodium *DC.*
3055. lepidissimum *S. Moore.*
3056. leptolepis *DC.*
3057. longifolium *DC.*
3058. metalasioides *DC.*
3059. miconiæfolium *DC.*
3060. mixtum *O. Hoffm.*
3061. Mundtii *Harv.*
3062. obductum *Bolus.*
  b. laxior *Bolus.*
3063. obvallatum *DC.*
3064. odoratissimum *Less.*
3065. opacum *Klatt.*
3066. oreophilum *Klatt.*
3067. pachyrhizum *Harv.*
3068. paronychioides *DC.*
3069. parviflorum *DC.*
3070. plantaginifolium *O. Hoffm.*
3071. platypterum *DC.*
3072. polycladum *Klatt.*
3073. polyphyllum *Conrath.*
3074. quinquenerve *Less.*
3075. Randii *S. Moore.*
3076. reflexum *N. E. Br.*
3077. rugulosum *Less.*
3078. Schlechteri *Bolus.*
3079. setosum *Harv.*
3080. simillimum *DC.*
3081. splendidum *Less.*
3082. squamosum *Thunb.*
3083. subulifolium *Harv.*
3084. Zeyheri *Less.*
  a. Burchellii *DC.*

857. Stoebe, Linn. (9037).
3085. cinerea *Thunb.*
  b. plumosa *Less.*

858. Athrixia, Ker-Gawl. (9055).
3086. elata *Sond.*
3087. Gerrardi *Harv.*
3088. phylicoides *DC*

859. Inula, Linn. (9061).
3089. lanceolata (*Harv.*) *O. Hoffm.*

860. Pegolettia, Cass. (9073).
3090. tenuifolia *Bolus.*

861. Pulicaria, Gærtn. (9078).
3091. capensis *DC.*

862. Philyrophyllum, O. Hoffm. (9083).
3092. Schinzii *O. Hoffm.*

863. Geigeria, Gries. (9090).
3093. brevifolia *Harv.*
3094. Burkei *Harv.*
3095. intermedia *S. Moore.*
3096. passerinoides *Harv.*
3097. Zeyheri *Harv.*

157. COMPOSITÆ—*cont.*

864. Callilepis, DC. (9094).
3098. Laureola *DC.*
b. hispida *Sond.*
3099. leptophylla *Harv.*

865. Anisopappus, H. & A. (9096).
3100. Junodi *Hutch.*

866. Acanthospermum, Schrank. (9130) *
3101. *brasilum* Schr.

867. Xanthium, (Tourn.) Linn. (9148).*
3102. *spinosum* Linn.
3103. *Strumarium* Linn.

868. Zinnia, Linn. (9155).*
3104. *pauciflora* Linn.

869. Siegesbeckia, Linn. (9160).*
3105. *orientalis* Linn.

870. Melanthera, Rohr. (9204).
3106. Brownei *Sch. Bip.*

871. Spilanthes, Jacq. (9207).
3107. africana *DC.*

872. Chrysanthellum, Rich. (9232).
3108. procumbens *Pers.*

873. Bidens, (Tourn.) Linn. (9237).*
3109. *pilosa* Linn.
b. *leucantha* (Willd.) Harv.

874. Cosmos, Cav. (9238).*
3110. *bipinnatus* Cav.

875. Schkuhria, Roth. (9291).*
3111. *bonariensis* H. & A.

876. Tagetes, Linn. (9311).*
3112. *erecta* Linn.
3113. *minuta* Lam.

877. Eriocephalus, Linn. (9320).
3114. spinescens *Burch.*

878. Eumorphia, DC. (9323).
3115. Davyi *Bolus.*

879. Athanasia, Linn. (9326).
3116. acerosa *Harv.*
3117. punctata *Harv.*

880. Anthemis, Mich. (9330).*
3118. *Cotula* Linn.

881. Lidbeckia, Berg. (9337).
3119. integrifolia *Klatt.*

882. Matricaria, Linn. (9339).
3120. tenella *DC.*

157. COMPOSITÆ—*cont.*

883. Chrysanthemum, (Tourn.) Linn. (9341).
3121. *Leucanthemum* Linn.
3122. osmitoides *Harv.*
3123. *segetum* Linn.
3124. *vulgare* (Linn.) Bernh.

884. Cotula, (Tourn.) Linn. (9351).
3125. anthemoides *Linn.*
3126. *australis* Hook. f.
3127. microglossa (*DC.*) *O. Hoffm. & O. Ktze.*

885. Schistostephium, Less. (9356).
3128. cratægifolium *DC.*
3129. flabelliforme *Less.*
3130. heptalobum *B. & H.*
3131. rotundifolium *Fenzl.*

886. Artemisia, Linn. (9358).
3132. Afra *Jacq.*

887. Pentzia, Thunb. (9366).
3133. athanasioides *S. Moore.*
3134. globosa *Less.*
3135. virgata *Less.*
b. microcephala *Fenzl.*

888. Stilpnophytum, Less. (9369).
3136. sp.

889. Lopholæna, DC. (9401).
3137. platyphylla *Benth.*
3138. Randii *S. Moore.*

890. Gynura, Cass. (9405).
3139. crepidioides *Benth.*

891. Cineraria, Linn. (9406).
3140. albescens *N. E. Br.*
3141. alchemilloides *DC.*
3142. longipes *S. Moore.*

892. Senecio, Linn. (9411).
3143. achilleæfolius *Thunb.*
b. glaucescens (*DC.*) *Harv.*
c. brevilobus *S. Moore.*
3144. albanensis *DC.*
a. angustifolius *Harv.*
b. leiophyllus *Harv.*
3145. angustifolius *Willd.*
3146. barbertonicus *Klatt.*
3147. bupleuroides *DC.*
3148. concolor *DC.*
3149. coronatus *Harv.*
3150. deltoideus *Less.*
3151. diversifolius *Harv.*
a. integrifolius *Harv.*
3152. erubescens *Ait.*
3153. fulgens *N. E. Br.*
3154. Galpini *Hook. f.*
3155. hastulatus *Linn.*
a. nudiusculus *Auct.*
3156. johannesburgensis *S. Moore.*

157. COMPOSITÆ—*cont.*

892. SENECIO—*cont.*
3157. lasiorhizus *DC.*
  b. minor *Harv.*
3158. latifolius *DC.*
  b. retrorsus *DC.*
3159. (longiflorus *Sch. Bip.* ?)
3160. metallicorum *S. Moore.*
3161. microglossus *DC.*
3162. mikanioides *Otto.*
3163. orbicularis *Sond.*
3164. othonnæflorus *DC.*
3165. pentactinus *Klatt.*
3166. picridifolius *DC.*
3167. pleistocephalus *S. Moore.*
3168. pterophorus *DC.*
  a. apterus *Harv.*
3169. quinquelobus *DC.*
3170. rhyncholænus *DC.*
3171. serra *Sond.*
3172. serratuloides *DC.*
  a. gracilis *Harv.*
3173. speciosus *Willd.*
3174. tamioides *DC.*
3175. transvaalensis *Bolus.*
3176. trifurcatus *Klatt.*
3177. variabilis *Sch. Bip.*
3178. venosus *Harv.*

893. EURYOPS, Cass. (9417).
3179. Gilfillani *Bolus.*
3180. lateriflorus *Less.*
3181. multinervis *N. E. Br.*
3182. pedunculatus *N. E. Br.*
3183. striatus *N. E. Br.*
3184. sulcatus *Harv.*
  a. densifolius *Sond.*
3185. tenuissimus *Less.*

894. OTHONNA, Linn. (9420).
3186. coriifolia *Sond.*
3187. disticha *N. E. Br.*
3188. natalensis *Sch. Bip.*
3189. pallens *DC.*
3190. ramulosa *DC.*
3191. scapigera *Harv.*

895. GAMOLEPIS, Less. (9421).
3192. caudata *Klatt.*
3193. laxa *Harv.*

896. DIMORPHOTHECA, Vaill. (9425).
3194. Barberiæ *Harv.*
3195. Ecklonis *DC.*
3196. spectabilis *Schltr.*

897. GARULEUM, Cass. (9426).
3197. Woodii *Schinz.*

898. OSTEOSPERMUM, Linn. (9427).
3198. grandidentatum *DC.*
3199. moniliferum *Linn.*
3200. muricatum *E. Mey.*
  b. asperum *E. Mey.*

157. COMPOSITÆ—*cont.*

899. TRIPTERIS, Less. (9428).
3201. glandulosa *Turcz.*
3202. leptoloba *Harv.*

900. URSINIA, Gærtn. (9431).
3203. annua *Less.*
3204. erectifolia *Bolus.*
3205. saxatilis *Baur.*

901. ARCTOTIS, Linn. (9432).
3206. micrantha *Thunb.*
3207. scaposa (*Harv.*) *O. Hoffm.*
3208. Schimperi (*Sch. Bip.*) *O. Hoffm.*

902. GAZANIA, Gærtn. (9434).
3209. canescens *Harv.*
3210. krebsiana *Less.*
3211. linearifolia *Bolus.*
3212. pygmæa Sond.
3213. serrulata *DC.*

903. BERKHEYOPSIS, O. Hoffm. (9436).
3214. Kuntzii *O. Hoffm.*

904. BERKHEYA, Ehrh. (9438).
3215. Adlami *Hook. f.*
3216. cuneata *Willd.*
3217. echinacea (*Harv.*) *O. Hoffm.*
3218. hirpicioides *Sond.*
3219. ingrata *Bolus.*
3220. insignis *Harv.*
3221. latifolia *Wood & Evans.*
3222. linearifolia *Bolus.*
3223. magalis-montana *Bolus.*
3224. milleriana *Bolus.*
3225. nivea *N. E. Br.*
3226. onopordifolia (*DC.*) *O. Hoffm.*
3227. Radula (*Harv.*) *O. Hoffm.*
3228. seminivea *Harv. & Sond.*
3229. setifera *DC.*
3230. speciosa (*DC.*) *O. Hoffm.*
3231. subulata *Harv.*
  b. insignis *Auct.*

905. PLATYCARPHA, Less. (9441).
3232. parvifolia *S. Moore.*

906. CYNARA, Linn. (9463).*
3233. *Scolymus* Linn.

907. SILYBUM, Adans. (9464).*
3234. marianum Gærtn.

908. CENTAUREA, Linn. (9476).*
3235. *Cyanus* Linn.
3236. *melitensis* Linn.

909. CNICUS, (Linn.) Gærtn. (9479).*
3237. *Benedictus* Linn.

157. COMPOSITÆ—*cont.*

910. DICOMA, Cass. (9501).
    3238. anomala *Sond.*
        b. Sonderi *Harv.*
        c. cirsioides *Harv.*
        d. microcephala *Harv.*
    3239. capensis *Less.*
    3240. diacanthoides *Less.*
    3241. macrocephala *DC.*
    3242. Schinzii *O. Hoffm.*
    3243. speciosa *DC.*
    3244. Zeyheri *Sond.*
        b. thyrsiflora *Klatt.*

911. GERBERA, Gron. (9528).
    3245. ambigua *Sch. Bip.*
    3246. discolor *Sond.*
    3247. Galpini *Klatt.*
    3248. Jamesoni *Bolus.*
    3249. Kraussii *Sch. Bip.*
    3250. natalensis *Sch. Bip.*
    3251. piloselloides *Cass.*
    3252. plantaginea *Harv.*
    3253. viridifolia *Sch. Bip.*

912. CICHORIUM, Linn. (9553).*
    3254. *Intybus* Linn.

157. COMPOSITÆ—*cont.*

913. HYPOCHÆRIS, Linn. (9572).*
    3255. *radicata* Linn.

914. TRAGOPOGON, (Tourn.) Linn. (9579).*
    3256. *porrifolius* Linn.

915. TARAXACUM, Wiggers. (9592).
    3257. *officinale* Weber.

916. SONCHUS, Linn. (9595).*
    3258. dregeana *DC.*
    3259. nanus *Sond.*
    3260. *oleraceus* Linn.
        b. *ciliatus* (Lam.) Harv.

917. LACTUCA, (Tourn.) Linn. (9596).
    3261. capensis *Thunb.*

918. CREPIS, Linn. (9605).
    3262. polyodon *Bolus.*

919. HIERACIUM, (Tourn.) Linn. (9607).
    3263. capense *Linn.*
        b. microcephala *Harv.*
    3264. polyodon *Fries.*

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ANNALS OF THE TRANSVAAL MUSEUM
MEDEDELINGEN VAN HET TRANSVAAL MUSEUM

VOLUME III.

PART 4, *containing:—*

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ON A COLLECTION OF REPTILES FROM MADAGASCAR MADE DURING THE YEAR 1911.

By Paul A. Methuen, F.Z.S., and John Hewitt, B.A. (Cantab.).

Introduction.

The Reptiles recorded and described in this paper were collected by Mr. Methuen, who was assisted by Monsieur Herschell-Chauvin, of Tamatave, during the months from May to December, 1911, in various parts of the island of Madagascar.

The majority of the specimens forming the collection are in the possession of the Transvaal Museum, a duplicate set having been sent to the Oxford University Museum.

Before proceeding with the descriptions, it would be as well we think to explain briefly the general characteristics of the regions in which the Reptiles were taken, and in order to facilitate matters, a map is given.

The island of Madagascar can be divided into three distinct floral regions, namely, the Eastern, the Western, and the Central or Plateau region. In these several zones the average precipitation of rain is different, the heaviest rainfall occurring in the eastern parts, the lowest in the western. The western region can be sub-divided into the western proper (from the Òniláhy River to the northern part of the island) and the south-western (south of the Òniláhy River, embracing among other territories those of the Màhafály and the Antandróy, and stretching as a fairly wide belt towards the east well into the Province of Fort Dauphin, in fact within 50 kilometers or so of the town bearing this name).

The general characteristics of these zones are as follows:—The eastern region varying naturally with the latitude is very hot in summer and fairly cool in winter. The precipitation is heaviest when the monsoon winds from the east are blowing, that is from the months of December o April. The driest months are during August, September, and October.

The mean annual rainfall for Vàtomándry (on the coast between latitude 19 and 20 S.) from the years 1902 to 1904, and 1906 to 1910 was 112 inches, the maximum 122 inches, and the minimum 107½ inches.

Except in those parts where the destructive force of the natives and of European forest-concessionaires is in evidence, a luxuriant monsoon rain-forest of tropical evergreens clothes the slopes of the mountains, which rise to the plateau, and descends over the mâmelons and unhealthy plains to the coast.

While travelling from the coast to the interior, the facies of the country changes considerably, as much according to the species of trees constituting the forests as to the actual lie of the land. In the littoral and sub-littoral belts, for instance, such trees as *Barringtonia*, *Terminalia*, *Casuarina* (*C. equisitifolia*), *Afzelia*, *Calophyllum*, *Dracaena* are a characteristic feature of the vegetation; and the ebony (*Diospyros* spp.), the rosewood, the palissandre, and other valuable woods still hold their own against the inroads of the woodman's axe; in the undergrowth in this region Pandani are very common, and amongst the most noteworthy epiphytes are two fine species of *Angroecium*; here also *Nepenthes* is to be seen.

Ascending the slopes of the mountains one passes through forests of a somewhat different nature. Ferns, and especially tree-ferns, are very numerous, and constitute the most conspicuous and beautiful components of these forests; palms are comparatively rare. Among the trees typical of or common in this upper zone may be mentioned *Podocarpus*, *Symphonia* and *Garcinia*, *Dombeya*, *Grewia*, *Eugenia*, *Weinmannia*, *Elaeocarpus*.*

The Plateau is for the most part a bare steppe country. The grasses belong largely to cosmopolitan species. Its climate is sub-tropical; the Ankaratra mass, which rises to a height just short of 9000 feet, has a climate and flora which is almost temperate.

The rainfall is seasonal, a wet summer and a dry winter obtaining; for Tananarive the rainfall has an average of 53 inches (Tananarive Annual). There can be no doubt but that at one time a dense forest covered this Plateau, and there is reason to suppose that the Malagasy destroyed the greater part of these woods for the purpose of making rice fields, etc. Now in parts only one sees remains of this supposed extensive forest in kloofs of the hills, or as isolated patches where the population is thin, as in the country lying between Ankazobé and Andriba: in such parts the aspect of the country is often park-like.

The last region to be considered, namely the Western, has the lowest rainfall; at Mòrondáva for the years 1902 and 1903 and 1905 to 1910, the average rainfall was 24 inches, the maximum 38 inches, and the minimum 12·2 inches. At Tulear, which lies in the south-west, the rainfall is still lower; the Jesuit Fathers at Tananarive gave us the following records:—for the year 1902 the rainfall was 11·4 inches, for 1903 1·75 inches, and 1904, 29 inches; the average rainfall for the south-west does not probably exceed 16 inches, and in the extreme south, say near Cape St. Marie, the precipitation is undoubtedly even lower. The rainy season is during the months of January and February, and may be prolonged another month or two or start a month or so earlier. The western parts of the island are undoubtedly the hottest, and the south-western, as has been pointed out, the driest.

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* In mention of the above trees we have relied largely on Baron and Louvel.

As to vegetation, the south-west is clothed by a low thorn or scrub forest of deciduous trees mostly. Conspicuous plants are species of *Euphorbia* (*Hintisy* section), *Asclepiads* (chiefly lianes), the Tamarind, the little fan-palm *Hyphaene coriacea*, a species of *Adansonia*, *Sclerocarya caffra*, and numerous thorn-trees or rather bushes. Orchids, grasses, and ferns are rare. In parts the tall thorny stems of species of Sapindaceae (*Didiera* and *Alluaudra*) give to the landscape a bizarre appearance.*

A great extent of the south-west is characterized by a calcarous massif of Eocene marine deposits in the form of a plateau; further inland and to the east, crystalline schists and granites appear; extensive marine deposits of Cretaceous to upper Permian age have been signalized as constituting the rocks of the western parts of the island; this belt is invaded by granite in places, the most important interruption occurring in the district of Ambongo, which lies somewhat to the south of Mòjungá. On the other hand, the plateau and the east is composed mainly of Archean rocks, granites, gneiss, and here and there crystalline schists. Near the east coast Cretaceous deposits have been found in small areas. Pleistocene and recent alluvial deposits occur along the coast in all parts of Madagascar and here and there on the plateau; in the west they are in places very extensive.

This general description, brief as it is, will it is hoped give the reader an idea as to the conditions in which the Reptiles recorded in this paper live. As may be supposed, though some of the Malagasy Reptiles occur throughout the island, others were found to have a limited distribution, regulated presumably by climatic conditions. Thus *Hemidactylus mabuia* is found in all parts of the island except in the higher parts of the plateau. *Mabuia gravenhorsti* is ubiquitous. On the other hand, *Uroplates fimbriatus* is confined to the rain-forests of the east; *Homopholis heterolepis* to the dry south-west.

LIST OF THE REPTILES COLLECTED. †

LACERTILIA.

GECKONIDAE.

PHYLLODACTYLUS BREVIPES, Mocquard. A single specimen from Tsìvanóa in the south-west. 4025.

P. BASTARDI, Mocq. A good many specimens, adult and juvenile, were taken at Andrànoláho in the fringing forest of the Òniláhy River. In young specimens the dark markings on the back are much more distinct than in adults. 4000–4012. 4057.

P. POROGASTER, Boulenger. A single specimen which appears to belong to this species from Tsìvanóa. Our specimen does not show the pores on the enlarged scales of the umbilical region; we suppose that this may be a sexual character. Total length, 52·5 mm., of which the tail measures 24·5 mm. 3998.

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* We are indebted to Monsieur Perrier de la Bathie for much of the information contained in this paragraph, and also for the excellent photograph from which Fig. 2, Plate VII, has been prepared.

† After every species is given the catalogue number in Transvaal Museum collection only.

EBENAVIA INUNGUIS, Böttger. A single specimen collected by M. Herschell-Chauvin in the neighbourhood of Tamatave. 3999.

LYGODACTYLUS MADAGASCARIENSIS, Böttg. Three specimens were taken at Tsìvanóa, near Tuléar. 4022–24.

L. VERTICILLATUS, Mocq. The differences between this species and the preceding seem to be very slight. In fact, we have two or three specimens of *verticillatus* which in the characters of the tail are barely distinguishable from *madagascariensis*. This species was found in the same locality as *madagascariensis*, but in greater quantity. Our records are from the district of Tuléar and from various places on the Ònilàhy River. Its slatish colour serves to conceal it amongst the lianes and thin twigs of the bushes on which it is to be found. 4013–21.

LYGODACTYLUS MIOPS, Mocq. Two specimens were taken in the eastern parts, one at Anàlamazótra, the other at Ambílo. 3996–97.

HEMIDACTYLUS MABOUIA, Moreau de Jonnés. Found abundantly on the east coast in the districts of Àndevoránto and of Tamatave. Taken also in the north-west at Maèvatanána, and in the south-west near Tuléar. It is a frequent occupant of Malagasy houses. 4026–45.

H. FRENATUS, Dum. and Bibr. Several specimens on the east coast at Ambílo, district of Àndevoránto. 4046–51.

HOMOPHOLIS HETEROLEPIS, Blgr. Two specimens in the south-west, in the district of Bètsióky. 4052–53.

GECKOLEPIS TYPICA, Grandidier, MODESTA, var. nov. Differs from *typica* in that the naso-rostrals are separated by one or two small scales and in the number of scales round the body. In the four specimens taken at Àndranoláho, on the River Ònilàhy, the number of scales round the body was found to be respectively 22, 25, 25, and 26. These characters which distinguish the variety from *typica*, would appear to relate it to *maculata*; but from this latter species it is easily to be distinguished by the fact that as in *typica* the internal pair of post-mentals are separated by the mental scute.

Colour iridescent bluish- or brownish-grey above; white or dirty white below. Tail the same colour as the body.

The lengths of three specimens are as follows:—

TOTAL LENGTH.	LENGTH OF TAIL.
mm.	mm.
138	75
133·5	66·5
128·75	61·75

4054–55, 4146.

PHELSUMA MUTABILE, Grandid. This species, together with the following, was found very commonly in the fringing forest of the Ònilàhy River at Màroamálona, Àndranoláho, and at Tòngobóry. A single specimen was also taken at Maevatanana. 4058, 4060–62, 4064, 4066, 4068, 4071–73, 4075, 4076.

PH. STANDINGI, sp. nov. Closely related to *Ph. mutabile* and to a less extent to *Ph. laticauda.*

The chief characters of importance are : the small size of the naso-rostrals and their separation by two scales ; the proportional lengths of the snout to the diameter of the orbit and to the distance from the orbit to the ear ; the size and number of the chin-shields ; the lepidosis of the body ; the shape, scaling, and segmentation of the tail.

Description.—Snout nearly twice as long as the horizontal diameter of the eye, and about one and a half times the distance from the eye to the ear opening ; the actual measurements are :—

Snout 11 mm. : horizontal diameter of eye 5·6 mm. : distance of eye to ear opening 7 mm.

Rostral with median cleft above. Nostril pierced between first upper labial, naso-rostral, postnasal, and a small scale between the last two scales ; naso-rostrals small, separated by two small scales. Nine upper and seven lower labials. Mental sub-pentagonal ; four pairs of chin-shields bordering the labials ; inner pair the largest. Scales of body smooth ; those on the flanks about the same size as the dorsals. Tail oval in section, not as broad as the back. Tail-segments composed of six or seven whorls of scales above ; lower surface somewhat irregularly scutellated, though medianally a double row of enlarged scales can be easily discerned.

Colour above emerald green with numerous dark irregular transverse bars ; below white, the throat slightly flecked with bluish-grey, and tail bluish.

Measurements : from snout to vent, 87·5 mm. ; tail (imperfect), 61·4 mm. 4251.

We have much pleasure in naming this species after Dr. H. F. Standing of Tananarive.

PH. LATICAUDA, Böttg. Our specimens show the following characters, which seem to be worthy of mention. The number of femoral pores varies from 20 to 22. The naso-rostrals are usually single, but in one specimen two on each side are present. The rostral may or may not have a cleft above.

Localities : One specimen from Mòjungá, the others from Màroamálona. 4056, 4059, 4065, 4067, 4069, 4070, 4074.

PH. MADAGASCARIENSE, Gray. Some specimens from Ambílo in which we notice that the median dorsal cleft of the rostral scute may or may not be present. 4077–81.

PH. LINEATUM, Gray. Many specimens from the eastern parts. In one example, a juvenile, the mental scute is in contact with three chin-shields, instead of with two as in typical specimens. 4082–4106.

UROPLATES FIMBRIATUS, Schneider (Plate VIII). Several specimens from the forests adjacent to Anàlamazótra and from other parts in the east of the island. 4107–16.

U. EBENAUI, Böttg. (Plate IX). A single specimen from Anàlamozótra, answering to the description and figure of *U. phantasticus*, Blgr., which has been reduced by Mocquard to a synonym of *ebenaui.* 4252.

IGUANIDAE.

Hoplurus cyclurus, Merrem. From the south-west; records from Tuléar and district and the Ònilàhy River as far as Tòngobóry. 4122–26, 4253, 4254.

H. quadrimaculatus, A. Dum. Two specimens were taken at Ambòhibóla, in the hills near Tuléar. One of these is evidently juvenile. The head-scaling in the two differs considerably. The larger example, which measures 373 mm., of which the tail is 260 mm., has the scales between the nostrils strongly keeled; so also those covering the fronto-nasals. The scales between and behind the supra-orbitals and covering the parietal bones are convex, some being conical, and others keeled but not so strongly as those between the nostrils. The supra-orbital scales, on the other hand, are almost flat. The "occipital" shield is only slightly larger than the surrounding scales. The anterior border of the ear has about twelve spine-like scales of varying size.

In the case of the juvenile specimen, the head scales, excepting a few between the nostrils, are almost smooth, and the "occipital" shield is considerably enlarged. 4117–18.

H. saxicola, Grandid. Found living among rocks near Miáry, district of Bètsióky. It is worth mentioning that the shape of the "occipital" scute in our specimens varies considerably. 4119–21.

Chalarodon madagascariensis, Peters. A common lizard in the south-west, especially in sandy parts. Taken in the district of Tuléar, at Tsìvanóa. 4141–45, 4262–63.

GERRHOSAURIDAE.

Zonosaurus ornatus, Gray. Two specimens from the eastern forest of the mountainous districts adjacent to Analamazotra and Ambòhidratrímo. One of these, which is juvenile, possesses three upper labials on one side and four on the other, anterior to the subocular shield; the frontal is elongated and the prefrontals form a short suture; it has fifteen femoral pores on each side. The adult specimen, which has twelve femoral pores on each side, measures 300 mm., of which the tail is 185 mm. 4140, 4261.

Z. madagascariensis, Gray. Two specimens from the neighbourhood of Tòngobóry in the south-west. In one individual the prefrontals form a median suture of some length; in the other these scales are well separated. The length of the fronto-nasal relative to that of the frontal varies accordingly in the two. The interparietal is absent in one, barely suggested in the other specimen. The femoral pores on each side number twenty-four in one, twenty-three in the other. The length of the largest specimen is 382 mm., of which the tail is 242 mm. 4138–39.

Tracheloptychus madagascariensis, Pet. Several specimens from the south-west, along the Ònilàhy River. 4129–30, 133–34, 4258.

T. petersi, Grandid. Several specimens from sìvanóa. 4127–28, 4131–32, 4135–37, 4259,–60.

SCINCIDAE.

Mabuia aureopunctata, Grandid. On the Ònilàhy River, several individuals. In every case the prefrontals form a fairly long median suture, though in the British Museum Catalogue description, based apparently on Betsileo specimens, the frontal is said to be in contact with the fronto-nasal. A half-grown example is uniformly olive-coloured above, with only the faintest indication of yellow spots over the neck. 4148–51, 4266–67.

M. BOETTGERI, Blgr. Some specimens from Analamazotra. 4175–78.

M. GRAVENHORSTI, D. and B. Taken on the plateau at Tananarive, at Analamazotra, near the coast at Tamatave, and in several localities in the south-west. 4152–71.

M. ELEGANS, Pet. Taken in the south-west, in the neighbourhood of Tuléar, and on the Onilàhy River. 4172–74.

SCELOTES ASTROLABI, Pet. (Fig.). One specimen was collected by M. Herschell-Chauvin in the forest of Folohy, in the neighbourhood of Tamatave. The head scaling of this skink, which we presume is *S. astrolabi*, is somewhat remarkable, and we intend therefore giving a description of the chief features of the same.

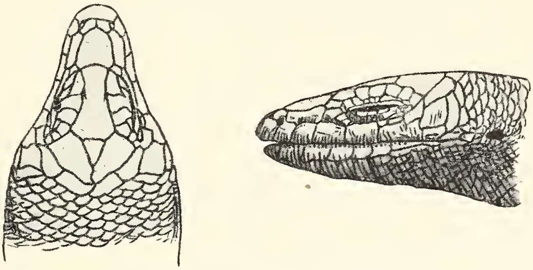


Fig. *Scelotes astrolabi*, Pet.; showing apparent abnormality of head-scaling.

The supra-nasals, which are small, form a fairly short median suture. The nostril is situated between the supra-nasal, the rostral, the first labial, and a long postnasal shield; the postnasal shield abuts on the supra-nasal, a large fronto-nasal, the first supraciliary, the preocular, and the first, second, and a small part of the third labial. Sutures defining the presence of loreals are entirely absent. This condition is the same on both sides of the head.

The frontal shield is long, slightly exceeding in length the distance from the distal extremity of the rostral to the posterior end of the fronto-nasal.

There are thirty-four scales round the centre of the body. 4187.

SC. MELANOPLEURA, Günther. Two specimens from Analamazotra; they both have the normal number of scales round the body, namely, twenty-four. 4185–86.

SC. IGNEOCAUDATUS, Grandid. A single individual from Andranolaho. 4184.

SEPSINA MELANURA, Günth. Two specimens from Analamazotra, which have twenty-eight longitudinal series of scales on the body; two others, presumably juvenile, with a series of twenty-six scales, from Tamatave (Herschell-Chauvin). 4188–90, 4264.

ACONTIAS HOLOMELAS, Günth. Two specimens from the eastern parts of the island (Herschell-Chauvin). The longitudinal series of scales round the body number thirty in both examples. 4192–93.

VOELTZKOWIA MIRA, Böttg. A single specimen from Miáry, district of Bètsióky. 4191.

CHAMAELEONTIDAE.

In the identification of the Chamaeleons we have been guided largely by Werner's thesis in the "Zoologische Jahrbuch. Syst." (Vol. xv, 1902), and his account of the group in "Das Tierreich" (27 Lief., 1911). We have experienced no small difficulty in assigning some of the specimens to known species, and in a few cases we have considered it expedient to give full descriptions and varietal or even specific distinction.

CHAMAELEON LATERALIS, Gray. Several specimens from Analamazotra and from the east coast at Ampàntomáizina. 4194–98.

CH. VERRUCOSUS, Cuvier. A large individual measuring in total length 22 inches was taken at Tuléar; it was not, however, preserved.

CH. PARDALIS, Cuv. A juvenile specimen from the east coast (Herschell-Chauvin). 4199.

CH. RHINOCERATUS, Gray, LINEATUS, var. nov. (Plate X). A single specimen, measuring 153 mm., of which the tail is 73 mm., was taken at Tsìvanóa. It is in most respects similar to *rhinoceratus* (= *antimena* according to Mocquard and Werner). However, certain differences have been recognized, of which the most important are to be seen in the shape of the rostral process, and in the presence of a very distinct white line occupying a median position on the ventral surface.

Description.—Casque which is not greatly elevated forms a sharp angle behind; parietal crest raised and well developed. The lateral crests are not so distinct, but are indicated by enlarged subconical tubercles. Tubercles also exist on the *canthus rostralis* and on the bony rostral process. This process is somewhat concave above, the concavity much narrowed being continued in front and very slightly below. Viewing the head in profile this same appendage is seen to be slightly concave below. The rest of the head is covered by flat scales of unequal size. Occipital lobes are entirely absent. A dorsal crest of a few enlarged conical tubercles is present, about thirteen in number, not extending much behind the elbow when the forelimb is extended backwards in line with the body.

An uninterrupted ventral crest exists, extending along the throat nearly as far as the vent. This crest consists of a single row of tubercles, broken up in places into two or even three rows.

The white line which indicates this ventral crest forks just before the vent, runs along the anterior part of the under surface of the thighs, and makes its way back along the posterior part of the same, continuing as a double line along three-quarters of the length of the tail.

The tubercles on the body are of unequal size; a single but rather irregular row of enlarged tubercles is developed on the flanks.

The tail is not compressed as in *rhinoceratus*. 4200.

CH. BREVICORNIS, Günth. This was found to be the commonest chamaeleon in the forests adjacent to Analamazotra; it was also taken at Ambòhidratrímo. 4201–18.

CH. MALTHE, Günth. Several specimens from Analamazotra. 4219-21.

CH. PARSONSI, Cuv., CRISTIFER, var. nov. (Plate XI, figs. 1–3). Differs from *parsonsi* in the possession of a dorsal crest on the body and an ill-developed parietal crest on the head. It is related also to *Ch. globifer*, from which, however, it differs essentially in the shape of the rostral processes, which appear to be typical for *parsonsi*. Our specimens show some variation in the lepidosis of the body and limbs; in most of the examples this lepidosis is homogeneous, but in one or two individuals a few somewhat enlarged tubercles are developed on the forearm.

A common chamaeleon at Analamazotra. It reaches a considerable size; the largest specimen preserved measures from tip of horns to vent 172 mm., and from vent to tip of tail 265 mm. 4222–27.

CH. GASTROTAENIA, Blgr. Two individuals were taken at Analamazotra and another at Ampàntomáizina. In the specimen from the coast there is an incipient development of a dorsal crest, but the tubercles are ill-developed and ill-defined and extend but for a short distance along the back; the lepidosis of the body is composed only of flattened scales; in the Analamazotra specimens small granules occur between the scales. 4228–30.

CHAMAELEON CHAUVINI, sp. nov. (Plate XI, fig. 4). This species is closely related to *Ch. furcifer*, and just possibly it may eventually prove to be a juvenile form of that species.

The casque is low, being practically continuous with the dorsal crest. Occipital lobes are absent. The scales on the head are small and subequal. There is no parietal crest. Three or four tubercles slightly larger than the scales which surround them indicate a very feeble dorso-lateral crest on both sides of the casque. The temporal crest is feebly developed; the lateral crest is continued in front into a bony rostral process which is short, slightly concave above, and bifid at the end; this rostral process projects about 1 mm. beyond the upper lip. There is present a dorsal crest of small compressed tubercles extending to a point just above the knee when the hind limb is placed in line with the body. No gular nor ventral crests; lepidosis of body, limbs, and tail homogeneous; scales granulated.

From tip of snout to vent the measurement is 56·5 mm. The tail is 56 mm. long.

A double white line extends along the throat and ventral surface of the body; just before the vent it is interrupted as it passes up and down the hind limbs, to continue its course behind the vent for a distance about equal to one-third of the length of the tail.

A faint light lateral line containing two white spots is also visible.

One specimen, a ♂, collected by M. Herschell-Chauvin near Tamatave. 4237.

CH. BIFIDUS, Bronquiart. An adult male from Ampantomaizina, and an immature male from the forest of Chambaena (?), a day and a half distant from Tamatave (Herschell-Chauvin). 4231–32.

CH. NASUTUS, D. and B. Several specimens near the coast at Ambílo and in the "jardins d'essai" near Tamatave. The colour of this animal in life is reddish-brown. 4233–36.

BROOKESIA SUPERCILIARIS, Kuhl. Several examples from Analamazotra. This animal was generally taken on the bark of trees; its peculiar shape and general colour harmonizes well with the lichen, moss, etc., which covers the trees in these parts. 4247–50.

It would be difficult to explain the extreme differentiation amongst the Chamaeleons of Madagascar in terms of any theory known to us. Not only is there a great number of species apparently distinct from each other, but in many cases the structural characters which separate the members of a group of closely allied species would not seem to be specifically adaptative (e.g. the head processes of *parsonsi* and other groups); whilst on the other hand the many lines of variation represented therein would hardly afford evidence in favour of orthogenetic evolution. We can point to two important external factors which may be supposed to have operated in the formation of species:—(1) *Climatic and environmental differences*—these are very great, even in comparatively small areas; (2) *geographical isolation*—the slow movements of Chamaeleons afford possibilities for isolation such as do not obtain in the great majority of Reptiles. Whether all closely related forms are geographically or topographically isolated from each other we cannot say; it seems probable that such is the case in the *parsonsi* group at any rate.

OPHIDIA.

BOIDAE.

CORALLUS MADAGASCARIENSIS, D. and B. A single specimen from Analamazotra, which measures 1240 mm. in total length, of which the tail is 125 mm. 2500.

COLUBRIDAE.

POLYODONTOPHIS TORQUATUS, Blgr. Two specimens, one from Ambohidratrimo, and the other from Analamazotra. The largest of the two has the tail imperfect, but measures from snout to vent 415 mm. 2501–02.

DROMICODRYAS BERNIERI, D. and B. Several specimens from the south-west, at Bètsióky and on the Ònilàhy River. 2503–07.

Genus LIOPHOLIDOPHIS, Mocquard. We have followed Mocquard in using the generic term *Liopholidophis* to include the Malagasy species which were formerly referred to the genus *Tropidonotus*; in his thesis on the Reptiles and Amphibians of Madagascar, Mocquard writes:—"Rapporteés successivement aux genres *Dromicus*, *Leptophis*, et *Tropidonotus*, les espèces rangeés içi sous le nom générique de *Liopholidophis* présentent cette particularité que, chez les mâles, les hémipénis sont profondément diviseés et que la queue est, en général, incomparablement plus longue que chez les femelles." We may further point out that the maxillary dentition of these species is quite different from that of the South African representative of the old genus *Tropidonotus*, viz. *T. laevissimus*.

L. LATERALIS, D. and B. Taken in various parts of the country; localities are Ambàtoharánana (near Ampàsimpótsy=Masse) in the east, in rice fields near Tananarive on the plateau, in the south-west on the Ònilàhy River, and at Bètsióky. 2511–19.

Plate V.

Sublittoral Forest with *Pandanus*: East Coast of Madagascar.

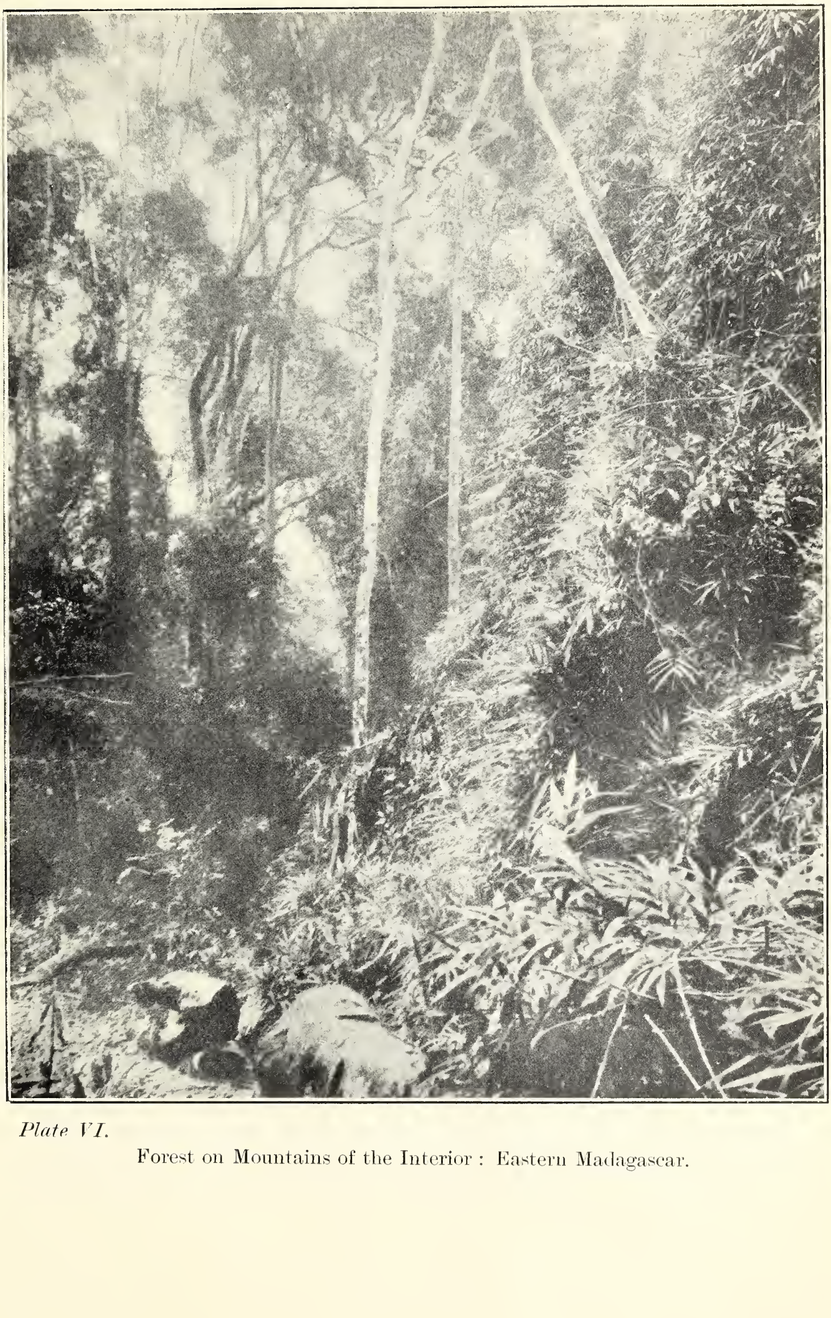


Plate VI.

Forest on Mountains of the Interior: Eastern Madagascar.

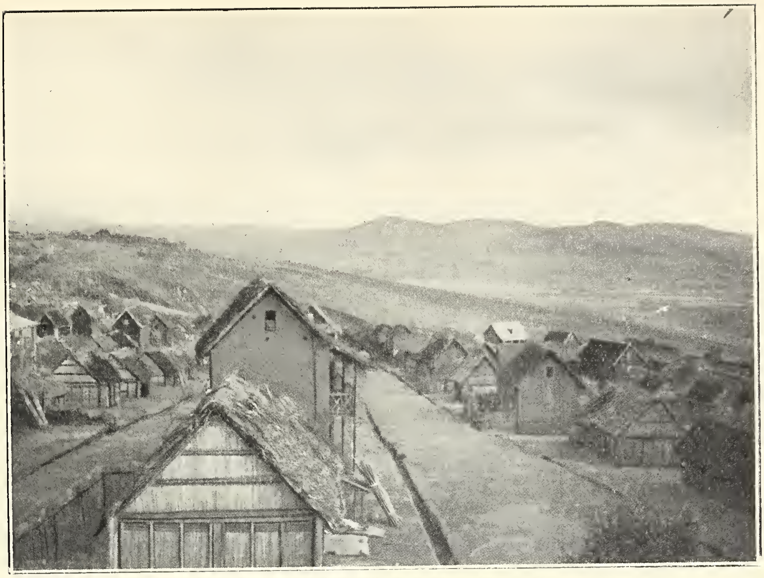


Fig. 1. Grass formation. Village near Lake Alaotra: Altitude 800–900 metres.

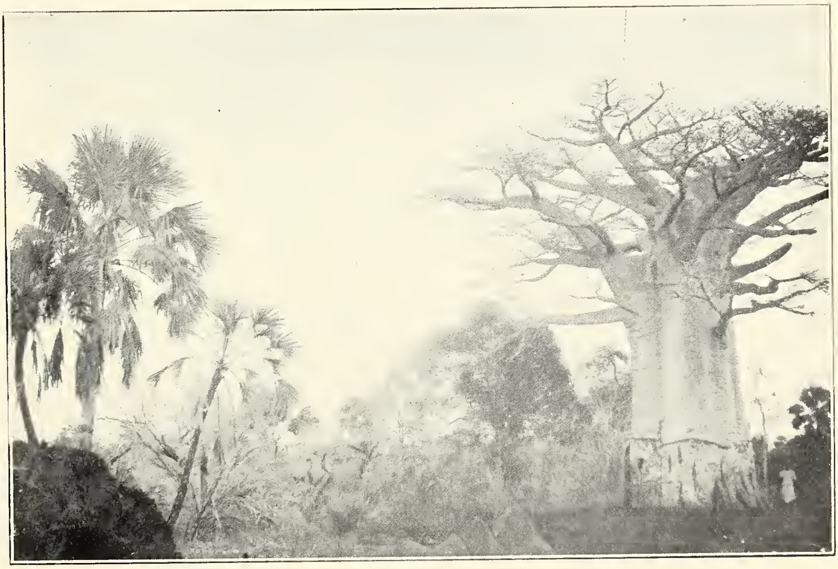


Plate VII. [From photo by Monsieur Perrier de la Bathi.

Fig 2. Bush in South-West Madagascar, with *Sclerocarya caffra*, *Adansonia*, *Tamarindus indica*, *Hyphaene coriacea*.

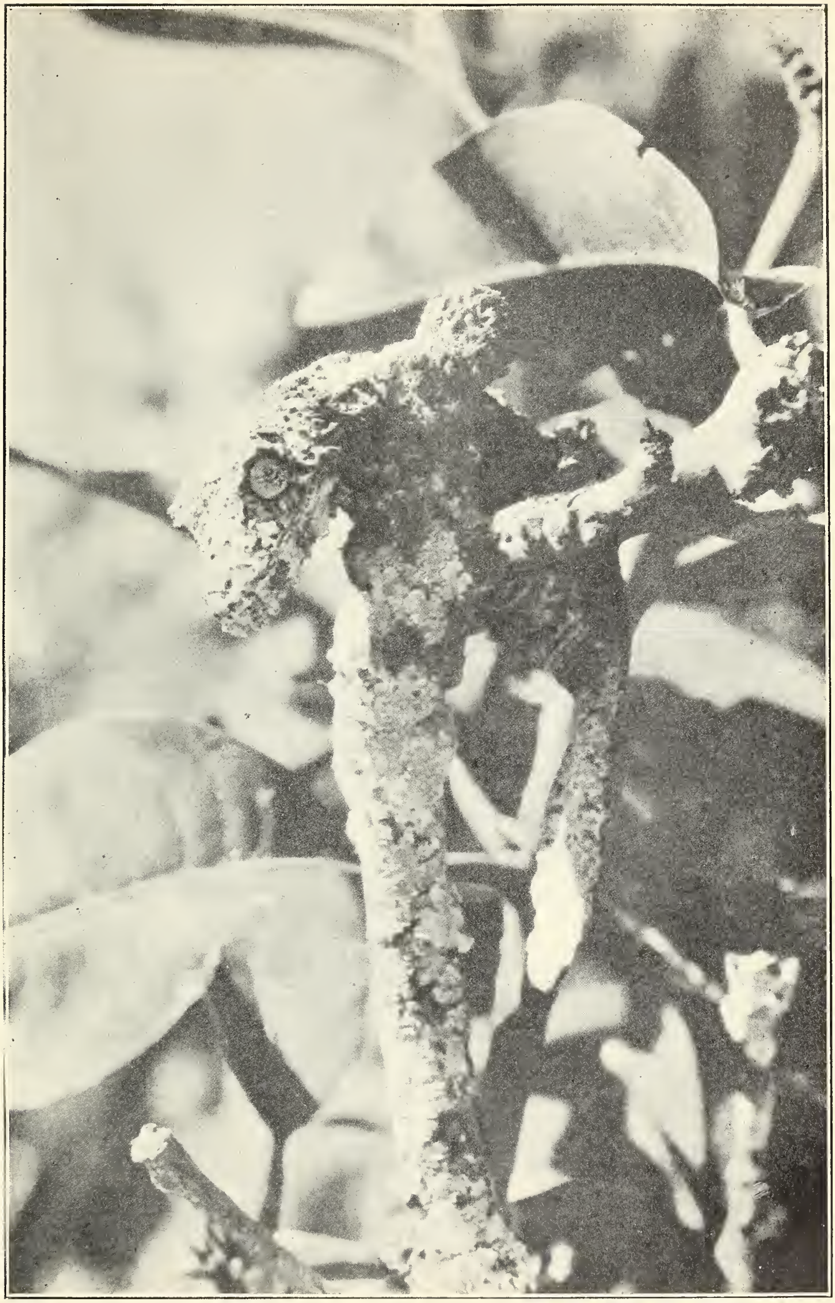


Plate VIII.

Uroplates fimbriatus, Schneider

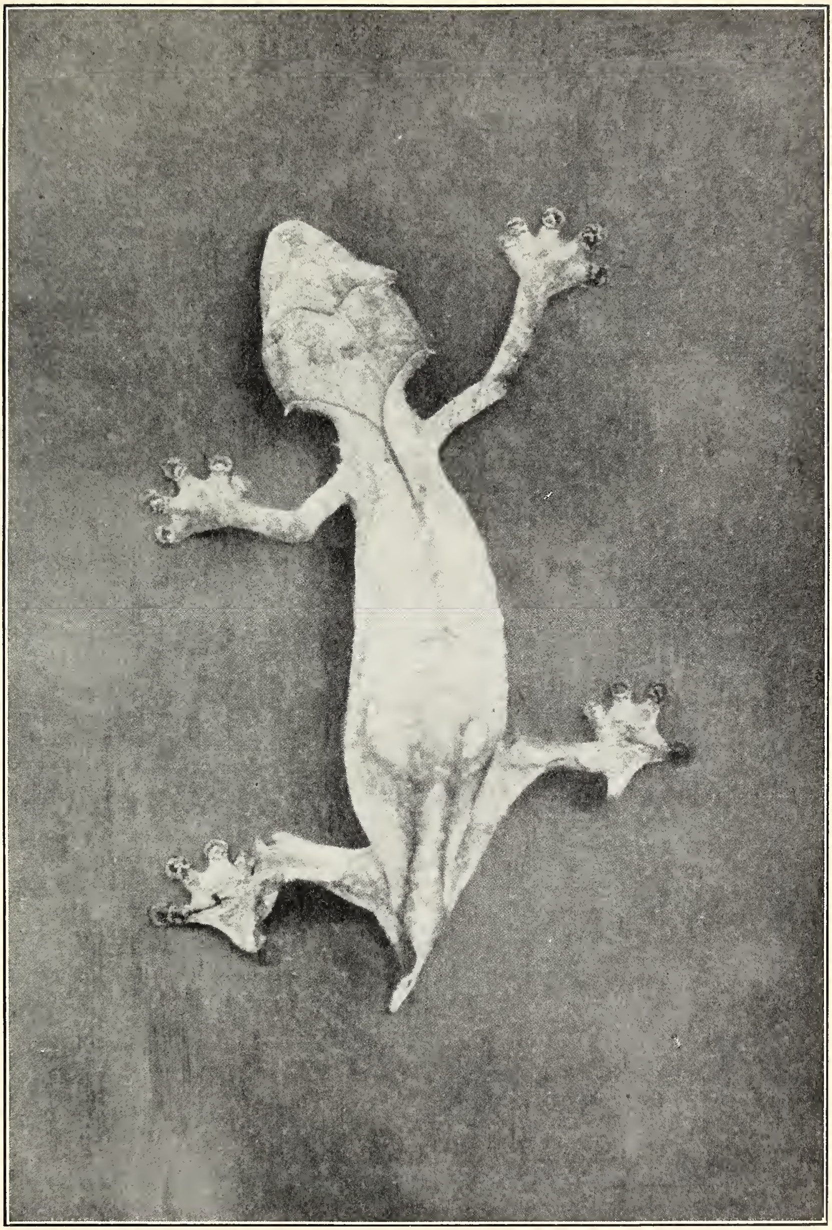


Plate IX.

Uroplates ebenaui, Boettger. (Slightly enlarged.)

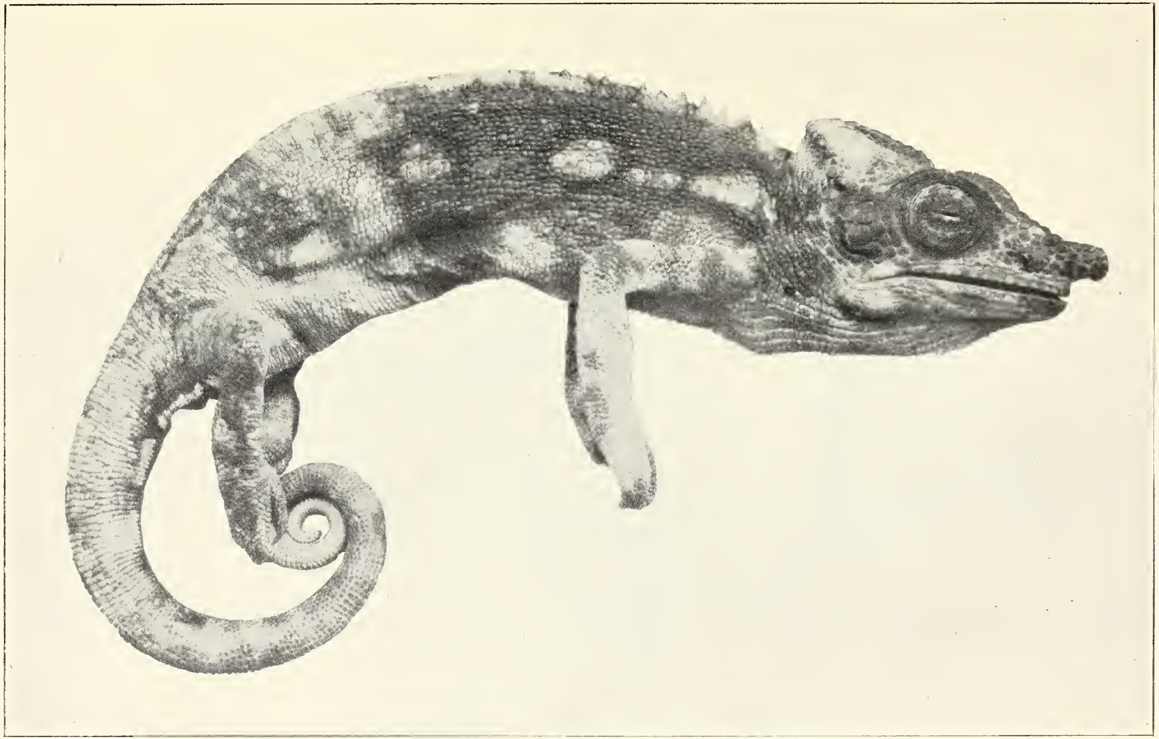
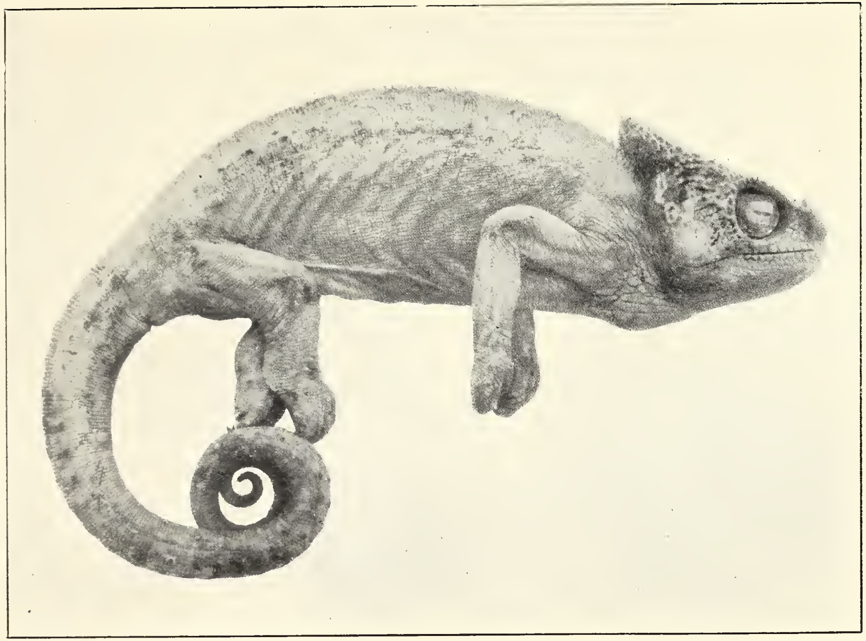


Plate X.

Chamaeleon rhinoceratus, Gray, var. nov. *lineatus*.
(Considerably enlarged.)



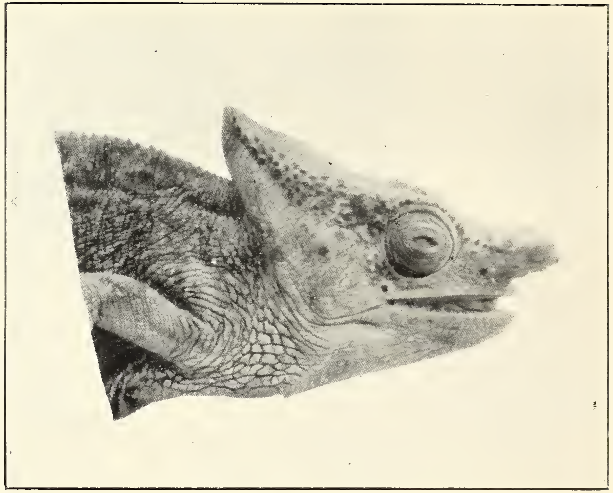


Plate XI.

Fig. 1.

Fig. 2.

Fig. 1–2. *Chamaeleon parsonsi*, Cuv., var. nov. *Cristifer*. (Fig. 1 reduced.)

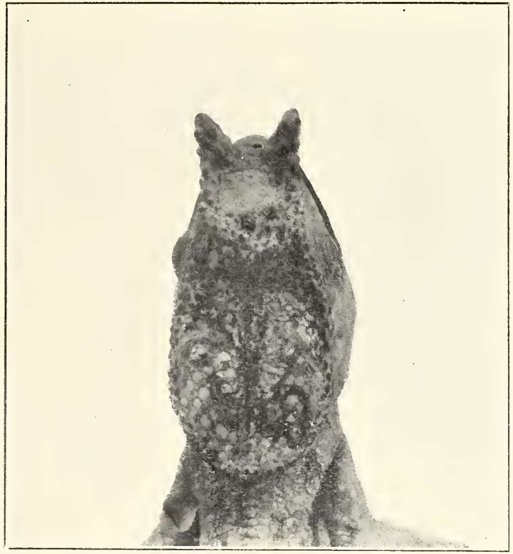


Plate XI. Fig. 3.

Fig. 3. *Chamaeleon parsonsi*, Cuv., var. nov. *Cristifer.*

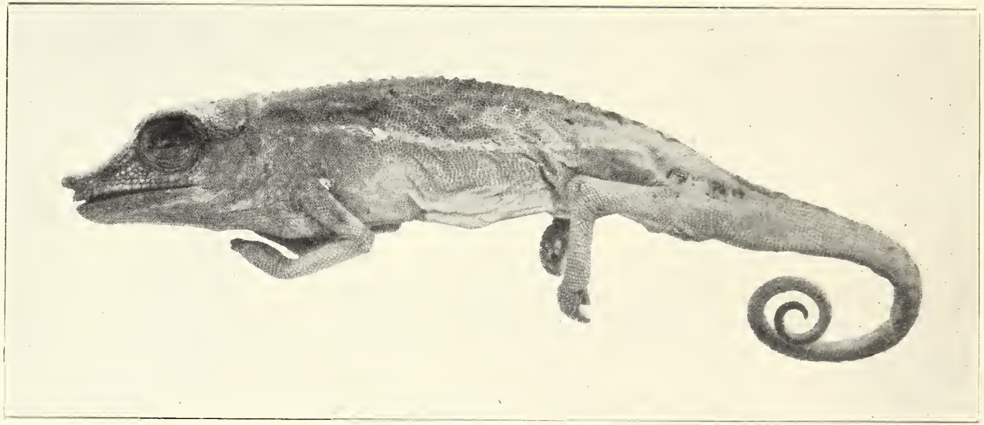


Fig. 4.

Fig. 4. *Chamaeleon chauvini*, sp. nov.

L. stumpffii, Böttg. Mocquard reduces this species to a synonym of *L. lateralis*, but we consider that on the size of the eye, the two species can be kept separate. Two specimens taken at Analamazotra are included in the collection. 2510–42.

L. sexlineatus, Günth. Two specimens, one from Analamazotra, the others from Ambòhidratrímo. 2508–09.

Lioheterodon madagascariensis, D. and B. A single specimen from Ambílo on the east coast. Scales in twenty-three longitudinal series. Two hundred and ten ventral scales ; anal entire ; sixty-three subcaudals, of which the first is divided, the second to the seventh entire, and the rest again divided. Total length, 1100 mm., of which the tail measures 190 mm. 2520.

L. modestus, Günth. Two specimens, the largest of which measures 1193 mm. in total length, from the south-west on the Ònilàhy River, at Maroamalona. Twenty-one longitudinal series of scales in both ; anal undivided ; in one specimen, ventral scales two hundred and two ; subcaudals sixty-four, of which the first fourteen are undivided. 2521–22.

L. geayi, Mocquard. A single specimen from Bètsióky, in the south-west. Total length 684 mm., of which the tail is 134 mm. Scales in twenty-three longitudinal series. Two hundred ventral scales ; anal undivided ; sixty-four subcaudals, of which the first is divided, the second to the fourteenth entire, the remainder divided. 2523.

Ithycyphus goudoti, Schegel. Two specimens from Ambílo on the east coast. 2524–25.

Eteirodipsas colubrina, Schleg. One specimen from the east, not far distant from Tamatave, in the " valleé d'Ivolino " (Herschell-Chauvin); also another from Ambílo. Further, several individuals were taken in the south-west in the neighbourhood of Bètsióky and of Tuléar.

The largest specimen measures from snout to vent 530 mm., tail 108 mm. 2526–31.

Mimophis mahafalensis, Grandid. Found to be a very common snake in the dry region of the south-west. Our examples are from the country through which the Ònilàhy River flows as far inland as Tòngobóry and also from Bètsióky. 2532–41.

NEW SOUTH AFRICAN GEOMETRIDAE.

By Louis B. Prout, F.E.S.

The species and forms here described are almost entirely from the rich material submitted to me for determination by Mr. C. J. Swierstra, of the Transvaal Museum, and Mr. A. J. T. Janse, of Pretoria. I am greatly indebted both to the Museum and to Mr. Janse for the presentation of duplicates of many of the species.

There is, up to the present time, absolutely no systematic work dealing with the Geometrid fauna of the Aethiopian Region, and the generic location of the species, pending systematic revision, is to a large extent merely provisional; but I believe sufficient clue as to the characters intended to be conveyed by the names employed will be found in my own writings, or in those of Mr. W. Warren, published in *Novitates Zoologicae.* The *Hemitheinae* have recently been revised by myself (*Genera Insectorum*, fasc. 129).

Subfam. Hemitheinae.

Prasinocyma chloroprosopa, n. sp.

♀, 32 mm. Face bright green. Palpus with second joint extending considerably beyond frons, third joint fully as long as second; ochreous brown above, paler beneath. Vertex between antennae white, head otherwise green. Antenna white at base, becoming ochreous brown to reddish. Thorax green above, white mixed with green beneath. Foreleg red above; midtibia tinged with red; hindtibia paler. Abdomen green dorsally, more narrowly so towards anus, white ventrally; no dorsal pattern.

Wings ample; forewing with SC^1 free, both wings with M^1 connate; bright green, slightly darker and more bluish than in *vermicularia*, without definite strigulation, the colour composed of dense dark green irroration on whitish-green ground. Forewing with costal edge narrowly ochreous at base, becoming more red-brownish; a small white spot in middle of inner margin; fringe concolorous, whitish at extremities. Hindwing with bend in termen at R^3 just appreciable, but very slight; discocellulars slightly darkened green, suggesting a weak, elongate cell-mark. Underside paler green, unmarked, costal edge of forewing narrowly ochreous to brownish.

Johannesburg, 25th April, 1902 (A. Ross). Type in Transvaal Museum.

Distinguished by the bright green face, white inner-marginal spot, etc. Guenée describes his *vermicularia* as having the face green, but with the summit ferruginous. The species which passes for *vermicularia* in collections usually has the face reddish-brown more or less mixed with green, though I have seen one or two answering his description; in any case the new species differs further in absence of vermiculation and presence of white inner-marginal spot. Probably *differens* Warr. (Novit. Zool., ix, 493, described as an *Agraptochlora*) is nearer, but that has brown cell-spot and fringes and white terminal dots. Most of the group have the face red.

Prasinocyma inversicaulis, n. sp.

♂, 30 mm. Face and palpus red, paler below; palpus short, terminal joint very small. Vertex green, very narrowly mixed with white in front. Antennal shaft white, becoming pale ochreous distally. Fore and middle legs red above and on inner side; hindtibia without hair-pencil. Thorax and abdomen as in *chloroprosopa*. Wings slightly more bluish than in that species, well strigulated with white, form narrower, termen of forewing more oblique, hindwing not elbowed, its inner margin rather long. Forewing with costal edge ochreous, hindwing slightly whitened costally, both wings without markings, fringes pale at tips. Underside whitish green.

Pinetown, Natal, 11th December, 1908 (G. F. Leigh). Type in coll. L. B. Prout, presented by the Transvaal Museum, which possesses other examples.

In the forewing, vein SC^1 touches C, M^1 is connate with R^3; in the hindwings SC^2 is short-stalked with R^1, M^1 longer-stalked with R^3. Apart from this reversal of the normal proportions of stalking—which may prove inconstant—the species differs from *vermicularia* Guen. in shape, length of palpus, simple hindleg, more definitely red face, and slightly darker colour.

Heterocrita deprensa, n. sp. (Pl. XII, Fig. 22).

♀, 32 mm. Face red. Palpus rather short, red above and on outer side, white beneath. Vertex snow-white, edged posteriorly with red; occiput green. Base of antenna white. Thorax green dorsally. Foreleg reddish above; hindtibia with terminal spurs only. Abdomen dorsally violet-white, mixed, especially the first segment, with brown-red; segments 2 to 4 with moderate crests.

Wings bright green. Forewing with costa whitish marked with red, and with a small blotch at base mixed with red, violet and blackish scales; discal spot red, moderately large, mixed with violet and blackish scales; postmedian line pale, extremely faint, not dentate, about parallel with termen; terminal line dark, thickest between the veins, accompanied proximally by an irregular red line which encloses pale violet marks between the veins, those between R^1 and R^2 and at tornus the largest, those at apex and between R^3 and M^2 extremely restricted; fringe white, tipped with red, and spotted with red at vein-ends. Hindwing similar, without costal markings, but with a red line along abdominal margin from near base to postmedian line. Underside paler, almost without markings, terminal line and fringe as above, the markings before termen faintly traceable, costal margin of forewing more broadly but not deeply red-shaded.

Transvaal (?), without exact locality. Type in Transvaal Museum.

Very like *H. discerpta* Walk., for which it might almost have been taken for a form, except for the structural differences. Palpus rather shorter, termen of forewing more rounded, of hindwing only very feebly excised between R^1 and R^3, forewing with SC^1 well free, SC^2 arising abnormally early, only just after R^1, which is almost connate with subcostals, hindwing with SC^2 scarcely stalked, hindtibia without median spur. The costal edge of the forewing is less strongly purple, and the terminal adornment is slightly different. If this be a *Heterocrita*, the tibial armature of the genus must be variable, which I already suspect. But I have only seen two or three examples, and some of them may have been broken. That is clearly not the case, however, with the present specimen. Walker says of his *discerpta* that it has four long spurs. At present his type ♂ has a single median and a pair of terminal, his ♀ a single median only.

Allochrostes biornata, n. sp. (Pl. XII, Fig. 38).

♂, 14 mm. Face green. Palpus greenish. Vertex with some red scales posteriorly and crossed by a red line behind the antennae. Antennal shaft white with some red dots. Thorax green, anteriorly dark red spotted with white; abdomen dorsally red dusted with white, and with white dorsal spots, the third large.

Forewing yellow green (somewhat faded), the costal margin red, irregularly dappled and irrorated with white, a larger white spot in apex, termen narrowly red, containing very large white spots at veins; antemedian and postmedian lines waved, whitish, very weak; discal spot elongate, somewhat curved, white, surrounded with red; fringe long, white, proximal half marked with red at vein-ends. Hindwing without red costa, but with a thick, interrupted sub-basal red line, conspicuous in cell and at inner margin; the rest nearly as in forewing, the cell-spot slightly less elongate, more reniform, antemedian line not discernible. Underside of forewing more broadly red costally, cell-spot red, not white-centred; both wings with a thick red terminal line.

Waterberg District, January to March, 1899. Type in Transvaal Museum.

Chrysocraspeda leighata Warr., ab. *dehonorata*, n. ab. (Pl. —, Fig. 13).

Differs from typical *leighata* (Warr. Novit. Zool., xi, 466; collected at the same locality and date) in the entire absence of the dark purple subterminal bands both above and below, the yellow at termen thus appearing less sharply defined.

Durban, 26th February, 1909. Type ♀ in coll. L. B. Prout.

It is not absolutely impossible that *C. nigribasalis* Warr. (Novit. Zool., xvi, 112) is also an aberration of this variable species.

Anacosymbia, n. gen.

Face smooth. Palpus rather short, with appressed scales. Tongue developed. Antenna in ♂ bipectinate with long, slender, finely, ciliated branches, apical segments merely shortly ciliated; in ♀ very minutely ciliated. Femora glabrous; hindtibia in ♂ without spurs, tarsus not aborted, almost as long as tibia; ♀ with all spurs. Wings shaped as in *Epicosymbia*. Forewing with cell about one-half, DC normal, SC^2 from cell, anastomosing with SC^1 and with SC^{3-4} to form a double areole, SC^5 arising before the latter anastomosis, R^2 normal, M^1 well separate. Hindwing with venation normal, SC^2 extremely short-stalked with R^1.

Type : *Anacosymbia perstrigulata*, n. sp.

Differs from *Epicosymbia* in the absence of ♂ spurs. To this genus must be referred also *albivertex* Swinh. Trans. Ent. Soc. Lond., 1892, p. 15, from the Khásis.

Anacosymbia perstrigulata, n. sp. (Pl. XII, Fig. 10).

♂ ♀, 26–29 mm. Face black, with a few red scales. Palpus reddish brown above, pale beneath. Vertex and shaft of antenna white, the latter becoming more tinged with reddish. Occiput reddish brown. Collar ochreous brown. Thorax reddish brown above, pale beneath. Legs pale, foreleg darker-marked. Abdomen dorsally red-brown mixed with black.

Wings bright red-brown, coarsely strigulated throughout with dull whitish yellow, the markings little darker, very indistinct. Forewing with costal edge narrowly whitish yellow ; traces of a curved antemedian line at one-third, dentate outwards on veins, a discal spot at beyond one-half, a lunulate-dentate postmedian line at about four-fifths, formed as in *Epicosymbia dentisignata* Walk. (= *perrufa* Warr.), a terminal line interrupted by whitish spots at vein-ends. Hindwing without antemedian line, postmedian very faint, at scarcely two-thirds. Underside paler, yellowish, most of the forewing (except posterior margin), costal edge of hindwing and all fringes excepting a proximal line flushed with red ; almost without markings.

Kranspruit, 20th December, 1906 (A. J. T. Janse), type ♂ in coll. British Museum. A second ♂ from same locality, 21st December, 1906, in coll. Janse, Groenvlei, 1st January, 1907 (A. J. T. Janse), one ♀ in coll. British Museum. Salisbury, Mashonaland (G. A. K. Marshall), one ♂ in coll. British Museum.

Lycauges phyletis, n. sp. (Pl. XII, Fig. 34).

♀, 22 mm. Head and body, with palpus, antenna and legs, concolorous with wings.

Forewing with costa arched, termen more oblique than typical, nearly straight ; above light violet grey, finely irrorated with brown ; lines brown ; first from costa beyond two-fifths, slightly curved anteriorly ; second (median shade) extremely faint (slightly better marked in the cotype), passing midway between discal spot and postmedian line, parallel with latter ; postmedian from about four-fifths costa slightly curved anteriorly, then nearly straight, very slightly oblique basewards ; distal area slightly darkened (especially in the type), containing a broad, nearly straight subterminal line of the ground colour ; discal dot small ; terminal line fine, little darkened ; fringe concolorous with wing. Hindwing with costa relatively rather long, apical region rounded, termen from R^3 to tornus almost straight ; above somewhat paler than forewing, slightly more ochreous grey, inner margin more irrorated, hence more nearly concolorous with forewing ; discal dot minute, closely followed by a median line (obsolescent in type) ; postmedian at above two-thirds ; terminal area scarcely darkened, subterminal consequently faint, its position indicated (especially in type) by a weak dark line bounding it proximally.

Underside of both wings coarsely irrorated with brown, appearing rather more ochreous; first line of forewing wanting; median and postmedian lines as above; subterminal scarcely indicated.

Waterberg District, January to March, 1899, Platriver, same district, January to February, 1903, both collected by R. v. Jutrzencka; type and cotype in coll. Transvaal Museum. A cotype, same district, in coll. British Museum, quite typical in facies but a most extraordinary sport in venation, R^2 of hindwing being obsolete (!).

Like *dapharia* Swinh., and one or two other species that have been referred to this genus, the shape is a little different from that of the type, recalling (as does also the coloration of the present species) *Phyletis* Guen. (Warr. restr.). The ♂ is unknown, but will probably prove, like *dapharia*, to have two spurs on the hindtibia.

Pylarge subobliquata, n. sp. (Pl. XII, Fig. 5).

♀, 22 mm. Face black, Palpus blackish above, first and second joints white beneath. Vertex and base of antenna white. Collar and extreme front of thorax light ochreous brown. Thorax and abdomen otherwise white, speckled with fuscous. Legs whitish, forecoxa and femur fuscous above.

Forewing white, speckled with fuscous; lines pale ochreous brown, very indistinct except the postmedian, which is mixed with fuscous; all nearly parallel with termen, starting from posterior margin at even distances, the first apparently curved or inbent in cell, but becoming almost obsolete, the median very slightly oblique, hence very slightly nearer to the postmedian at costa, postmedian thickened with dark spots on the veins; subterminal line indicated by faint pale brown shading on either side; discal dot black, not minute, placed considerably before the median line; termen with distinct black dots between the veins; fringe concolorous with wing. Hindwing without first line, the median crossing the cell-spot, postmedian very slightly incurved between R^1 and R^3. Under surface of forewing more suffused with fuscous in cell and costally thereto, median shade faintly discernible, postmedian, subterminal and terminal markings as above. Under surface of hindwing nearly as above, but without the median shade.

Haenertsburg, 4th December, 1911 (C. J. Swierstra). Type in coll. L. B. Prout, cotype in Transvaal Museum.

Apparently very nearly related to *obliquiscripta* Warr. (Novit. Zool., iv, 62, described as a *Sterrha*). It is therefore safe to assume that both belong to *Pylarge* (♂ hindtibia with two spurs, ♀ with four). In Warren's species the postmedian line is more feebly dark-spotted, the subterminal much more distinct, the median of forewing grey (less brown), *crossing* the cell-spot, that of hindwing placed *proximally* to the cell-spot. Moreover in the type of *obliquiscripta* SC^2 of the hindwing is separate, in *subobliquata* it arises from the base of the stalk of R^1.

Acidalia melliflua, Warr. ab. *sumpta*, n. ab.

Differs from typical *melliflua* Warr. (Novit. Zool., iv, 52, *Craspedia*) in the presence on the forewing above of a large blackish cell-mark instead of the minute dot, and on the hindwing of an elongate blackish cell-mark accompanied distally by a fuscous blotch reaching to the postmedian line and slightly across it, and extending as far as vein M^2; cell-spots also slightly increased on under surface.

St. John's, January, 1910 (H. H. Swinny). Type (♀) in coll. L. B. Prout; cotypes in coll. Transvaal Museum and British Museum, the latter (♀) from Durban, 3rd March, 1901 (G. F. Leigh).

Acidalia rossi, n. sp.

♂, 24–25 mm. Face and palpus black, the latter pale on the inner side. Antennal ciliation moderate (about 1½). Vertex pale, occiput fuscous; collar reddish brown. Thorax, abdomen and legs concolorous with wings, foreleg somewhat marked with fuscous above. Hindtarsus slightly over two-thirds length of tibia.

Wings whitish ochreous, fine speckled with fuscous atoms, the markings darker ochreous-grey, not very strong. Forewing with antemedian line at one-third, very fine and faint, curved; discal dot very black, moderate-sized; median shade thicker, from costa well beyond middle, curved and slightly sinuous, reaching posterior margin at middle, but passing the discal dot at about 1 mm. distally; postmedian line rather fine, fairly distinct, midway between median shade and termen, nearly parallel with former, but more bent outwards about R^1 and markedly incurved between R^1 and R^3; termen with small but conspicuous black dots between the veins; fringe concolorous with wing. Hindwing with termen very slightly prominent at R^3, but with no true tooth or tail; antemedian line wanting; median curved round cell-spot on its *proximal* side, then direct to middle of inner margin; postmedian gently incurved between the radials, recurved again later, hence appearing to project bluntly about R^3–M^1. Underside paler, especially hindwing; first line of forewing wanting; median shade (especially of hindwing) weak or almost wanting, postmedian line distinct, on hindwing placed nearer termen than above; cell-spots smaller and weaker than above.

Durban, 11th September, 1900 (type), 5th September, 1900 (cotype), taken by A. Ross; the former in coll. British Museum, the latter in coll. L. B. Prout; other examples from the same source are in the Transvaal Museum.

Acidalia duplicipuncta, n. sp. (Pl. XII, Fig. 18).

♀, 26 mm. Like *exiguaria*, Walk. (List Lep. Ins. British Museum, xxi, 368; nec Swinh. Trans. Ent. Soc., Lond., 1904, p. 560) but with the postmedian line placed nearer the termen (especially noticeable in the hindwing, where it is at about two-thirds instead of scarcely beyond the middle), the proximal diffuse shade of the hindwing almost encircling the discal spot, not placed proximally to it as in Walker's species, the black cell-spot of hindwing accompanied anteriorly by a white spot on DC^2; under surface of both wings weakly reproducing the markings of upper, excepting the first line of forewing and the white spot of hindwing.

Pretoria, 17th March, 1902 (C. J. Swierstra). Type in coll. Transvaal Museum.

The type specimen is of a dark grey colour, the broad subterminal line therefore showing up very strongly, as in dark specimens of *marginepunctata*, *fibulata*, etc.; but a second ♀, from Nairowa, British East Africa, in coll. British Museum, is brown, so that the colour is evidently variable, and it is not absolutely impossible, though very unlikely, that *sagittilinea* Warr. (Novit. Zool., iv, 219) from Mombasa Island is yet another colour-form of the same species, in spite of several differences indicated by Warren.

Ptychopoda sinuilinea, n. sp. (Pl. XII, Fig. 17).

♀, 19 mm. Face blackish. Palpus reaching somewhat beyond frons, blackish, base pale. Vertex and base of antenna pale ochreous, antenna distally darker. Occiput red-brown. Thorax and abdomen pale reddish brown, dorsally irrorated with darker.

Forewing pale ochreous brown, irrorated and lined with dark red-brown; first line oblique outwards from costa at one-fourth, acutely angled in cell, thence rather thick and lunulate to posterior margin at nearly one-third; median line from a thick black spot on costa at nearly one-half, *preceding* the discal spot, slightly irregular, with a marked sinus inwards in submedian area, thence approximated to inner line; postmedian line from about three-fourths costa, inangled near costa and between radials, and sinuate inwards from M^1 nearly to SM^2, this sinus showing slight teeth proximal on M^2 and fold; subterminal line pale, strongly lunulate-dentate and somewhat zigzag, indistinct in places, distinct between R^3 and M^2, where it encloses two large dark grey spots; cell-spot black, slightly elongate, terminal line fine, black, interrupted at veins; fringe very narrowly pale at base, its proximal half otherwise with large blackish spots opposite the veins. Hindwing similar, without first line, subterminal not enclosing conspicuous spots between R^3 and M^2. Underside without the dark irroration; markings weak, limited on both wings to an indistinct discal spot and postmedian line and faint terminal shade.

Waterberg District, 1898–99 (v. Jutrzencka). Type in coll. L. B. Prout; cotype in Transvaal Museum.

Somewhat rounder-winged and rather less rufous in tone than *Sterrha irrufata* Warr. (Novit. Zool., xii, 391), and not infuscated beneath; median line nearer base, outward curves in postmedian more regular; vertex slightly paler. Otherwise very suggestive of that species—which, however, so far as we yet know, is unique in its group in the possession of a pair of hindtibial spurs in the ♂.

Ptychopoda consericeata, n. sp. (Pl. XII, Fig. 9).

♀, 18 mm. Face and palpus black, the latter pale beneath. Vertex and base of antenna white; occiput grey. Thorax, abdomen, and legs concolorous with wings, forefemur blackish on inner side.

Wings smooth-scaled, silky, as in *subsericeata* Haw., and *straminata* Tr., between which it stands in colour; cream-colour sprinkled with grey, lines grey. Forewing with very faint antemedian line; a black discal spot, followed immediately by diffuse median shade parallel with termen; postmedian line at nearly three-fourths, weak, waved, rather nearer termen at posterior margin than at anterior; the lines or shades on either side of the subterminal equally weak or more so, rather thicker ; termen almost entirely without dark dots ; fringe plain, glossy. Hindwing with termen almost regular, but straight from R^1 to R^3 and again from M^1 to tornus, hence appearing very slightly prominent between ; first line wanting, median shade proximal to the cell-spot, curving round it. Forewing beneath with the basal part as far as median shade slightly suffused, otherwise as above ; hindwing beneath clearer white, with cell-spot as above, postmedian line still weaker, median and subterminals obsolete.

Pretoria, 20th March, 1910 (Miss J. Gunning). Type in coll. L. B. Prout ; cotype in Transvaal Museum.

The median shade of the forewing both above and beneath is slightly darker at R^3-M^1 than elsewhere, with the result that in certain lights the effect is produced of a small cloud exteriorly and posteriorly to the cell-spot and almost forming a part thereof.

Ptychopoda umbricosta, n. sp. (Pl.XII, Fig. 37).

♂ ♀, 14 mm. Face blackish. Vertex and base of antenna white. Front of thorax red-brown overshaded with fuscous. Thorax and abdomen otherwise concolorous with wings.

Wings elongate, strongly silky, pale stramineous with a few scattered black atoms. Forewing with costal margin nearly to apex red-brown, overshaded, especially in basal half, with fuscous ; lines obsolete, their position sometimes indicated by large dark costal spots. Hindwing unmarked. Fringes long, concolorous. Underside less glossy, dusted with fuscous, sometimes wholly suffused ; three curved darker lines or shades sometimes traceable.

Pretoria, type (♂), 16th April, 1910, in coll. A. J. T. Janse ; cotypes (♂ ♀), March and April, in coll. L. B. Prout, Transvaal Museum and British Museum, Annshaw, two ♀, larger, in coll. British Museum.

As *ab. punctigera*, n. ab., I describe a very distinct-looking ♀ in coll. Janse (Pretoria, 25th November, 1909), with lines traceable in pale grey, on forewing three, starting from ill-defined costal spots on hindwing two, rather nearly approximated, the outer strongly curved, between them a *large distinct discal dot.* Underside also strongly marked, both wings with rather large discal dot (crossed by a median line), a postmedian and a subterminal line. Possibly a distinct species, but so exactly agreeing in shape, in the extremely strong gloss, etc., that I prefer to regard it as an aberration, or at most a seasonal form.

This species is related to *minimaria* Warr. (Novit. Zool., xi, 468), not unlikely a subspecies, but in the lack of opportunity for exhaustive investigation it has been considered better to describe it independently. Differs in the contrasted costa and typically in the absence (almost or quite complete) of the strong spots at base of fringe ; one or two specimens show *minute* dots, and one Annshaw ♀ has a minute discal dot in the hindwing, in this approaching the *ab. punctigera.* In all forms the vertex is whiter than in the East African race.

Ptychopoda pericalles, n. sp. (Pl. XII, Fig. 32).

♀, 16 mm. Head with palpus and base of antenna bright rosy. Thorax above pale greyish olive, rosy in front.

Wings long and narrow. Forewing with apex rather acute; pale greyish olive; basal area almost to the postmedian fascia strongly suffused with rosy; a rosy postmedian fascia at about two-thirds, with its distal edge nearly parallel with termen, narrow at posterior margin, broadening much to costa; a rosy terminal band; fringe pale olive grey. Hindwing with a narrower rosy terminal band; no other markings. Under surface darker and duller, similarly but more confusedly marked, hindwing with terminal band broader than above, and with dull rosy suffusion nearly throughout.

Pretoria, 3rd March, 1911 (D. Burger). Type in coll. Transvaal Museum; a second ♀, from Mashonaland (H. B. Dobbie) in coll. British Museum is still more strongly suffused with rosy.

Nearly related to *Ptychopoda exquisita* Warr. (Novit. Zool., iv, 219) and *Pt. roseocincta* Warr. (*ibid.* vi, 32, *Eois*); differing from the former in the distribution of the rosy markings, the darkened underside, absence of rosy on thorax above, etc.; from the latter, to which it is still closer, in the pale fringes, absence of dark cell-spot and of white fillet between antennae. Veins SC^2 and R^1 of hindwing are normally stalked; Warren describes them as "not stalked" in *roseocincta*, but this may be a *lapsus*, as the stalking is usually one of the most constant generic characters.

Pseudasthena grataria, Walk. ab.

mediofusca, n. ab.

The typical ground-colour (yellow with red dusting and red lunulate-dentate lines) confined to the proximal and distal areas, the median area of both wings entirely clouded with blackish-fuscous, forming a broad central band. The costal one-third (approximately) of the forewing is also, though more feebly, suffused with fuscous. Under surface with the band also present, but less intense.

St. Johns, July, 1909 (H. H. Swinney). Type (♂) in coll. Transvaal Museum. A second ♂, from N'Dalla Tando, N. Angola, 26th November, 1908, in coll. G. T. Bethune-Baker.

Lithostege sesquifascia, n. sp. (Pl. XII, Fig. 31).

♂ ♀, 22–25 mm. Head, body, and wings light wood-brown, thorax and abdomen (especially beneath), and base of forewing above, except costally, rather paler. Forewing with two darker, broadly whitish-margined bands, the proximal from posterior margin at before one-half, oblique, terminating in apex of cell, the distal from posterior margin close to tornus running nearly into apex of wing, pointed at its apical end. Hindwing above and both wings beneath unmarked.

V n der Merwe, 12th December, 1906, type (♂) in coll. Janse; a ♂ from same locality and date in coll. British Museum. Pretoria, 11th February, 1910 (a ♀ taken by A. J. T. Janse) in coll. L. B. Prout. Two ♂ (Rietfontein and Deelfontein, Janse) and a ♀ (Rosmead, Cape Colony, November, 1901, S. Juby) in coll. British Museum.

Belongs to Warren's Sect. II of the genus [Ann. S. Afric. Mus., x (1), p. 23], ♂ antenna bipectinate. The pectus is also more hairy than in typical *Lithostege*. The rather more protuberant frons, better developed tongue and rougher scaling differentiate it from *Conchylia*, but it is undoubtedly intermediate and *Conchylia* may probably have to sink.

Onychia deversa, n. sp. (Pl. XII, Fig. 14).

♂, 27 mm. Head, body, and legs whitish grey densely mixed with fuscous, the abdomen dorsally less strongly than the thorax.

Forewing with basal patch and median band fuscous, margined with fine white lines; the basal patch moderately large, its proximal half paler than its distal, tinged with pink, its margin slightly curved and with small indentation at SC; median band broken into two by a broad whitish, pink-tinged central band, its proximal margin extremely indented in cell, slightly oblique outwards posteriorly, its distal margin lobed in middle, inbent in submedian area, then rather oblique to near tornus; an elongate black discal mark inconspicuous on the median band, just proximally to its pale part; a pinkish white lunulate-dentate subterminal line, with a long tooth basewards at SC^5 and crossed by a broad oblique whitish streak from apex; a fine pale brownish line closely following the median band; the rest of the wing marked with brown and fuscous, the fuscous strongest proximally to the subterminal line and as an interrupted line at termen; fringe whitish proximally, somewhat chequered with fuscous distally. Hindwing pale greyish with a sinuous whitish postmedian band, divided by a grey line; two weak dark lines proximally to this band and traces of a slender pale subterminal line; termen and fringe as on forewing; no cell-spot. Underside of forewing more uniform light fuscous as far as end of median band, with a large cell-spot; a whitish line bounding median band; subterminal broken up into white dots between the veins. Underside of hindwing similar to upper, but sharper-marked and with subterminal line as on forewing beneath.

Groenvlei, 4th January, 1907, type in coll. A. J. T. Janse. Pretoria 17th February, 1907 (A. J. T. Janse), one in coll. L. B. Prout. Haenertsburg, 5th December, 1909, 2 ♂ (C. J. Swierstra).

Except in the more irregular proximal margin of the median band and the whiter hindwing, this species strongly recalls the Palaearctic *O. peribolata* Hb.

Onychia cryptocycla, n. sp. (Pl. XII. Fig. 35).

♂ ♀, 32–37 mm. Head and body concolorous with wings. Forewing fawn-colour, sometimes greyish, irrorated with darker in such wise as to suggest a series of extremely indistinct wavy transverse lines; lines ferruginous; first line from costa at about one-fifth, right-angled in cell, thence nearly straight and vertical to posterior margin; second line (proximal edge of median area) from costa just beyond one-third, gently curved or wavy; postmedian from about two-thirds costa, gently outcurved anteriorly, then parallel with termen, again very slightly curved towards termen posteriorly; cell-spot large, diffuse, slaty-grey, darker on DC^2 itself; subterminal pale line lunulate-dentate, extremely indistinct; terminal line ferruginous, rather less bright than the other lines. Hindwing slightly paler, unmarked or with a very weak, curved ferruginous postmedian line (little beyond the middle), which is slightly pale-shaded distally; terminal line slender, weakly ferruginous, followed by a fine pale line at base of fringe. Under surface pale brown, slightly tinged with ochreous; forewing with large, roundish black discal mark and sometimes a weak postmedian line formed as above; hindwing with minute discal dot and sometimes weak postmedian line.

Waterval Onder, 22nd November, 1910, type (♀) in coll. A. J. T. Janse, White River, Eastern Transvaal, December, 1906 (A. T. Cooke), Johannesburg, 5th January, 1902, both ♀ ♀, in coll. British Museum. Pretoria, December, 1900 (Dr. Breyer), ♂ in coll. L. B. Prout. Also represented in coll. Transvaal Museum.

Closely related to *O. cryptospilata* Walk. (List Lep. Ins., British Museum xxvi, 1738), but usually distinguishable by its warmer colour (that species being cinereous) and always by the course of the lines; in Walker's species the postmedian line is not curved anteriorly but outangled in middle and the subterminal is distinct and straight.

Onychia epipercna, n. sp. (Pl. XII, Fig. 20).

♀, 27 mm. Face blackish. Palpus blackish, beneath whitish basally. Vertex and thorax concolorous with forewing, abdomen with hindwing, the abdomen with weak indications of large paired dark dorsal spots. Legs irrorated dark and lighter, but without distinct markings.

Forewing glossy pale grey, densely irrorated with fuscous; subbasal band moderately broad, darker and more mixed with ferruginous, interruptedly edged on both sides with black, a black tooth distally in cell being noticeable; followed by a very fine, inconspicuous pale line; median band rather broad, edged by fine pale (mostly white) line proximally and distally; proximally with deep, pointed incisions on both the folds, distally with a small tooth outwards between SC^5 and R^1, a strong pointed projection between R^3 and M^1 and minute indentations on all the veins; centre of the band less dark than its marginal parts, marked off by very weak dentate dark lines; distal extremity of the band interruptedly ferruginous; discal dot minute; terminal area mostly dark, an interrupted pale line closely following the pale margin of the band, an interrupted pale subterminal line, clearest and whitest at costa; an oblique black streak from apex, starting in the fringe; terminal line blackish, waved, slightly interrupted at the veins; fringe cut by an ill-defined, thick dark line, thickest opposite the veins. Hindwing paler and still more glossy, with a grey postmedian line, which is outbent between SC^2 and R^1 and just behind R^3. Forewing beneath weakly marked, the proximal part to beyond two-thirds slightly greyer than the distal, the division rather sharp, suggesting a postmedian line formed nearly like that of the *hindwing*; hindwing beneath rather darker and sharper-marked than above, with a strong black discal spot and strong thick postmedian line, the latter accompanied distally by a vague pale one.

Haenertsburg, 6th December, 1909 (C. J. Swierstra). Type in coll. L. B. Prout; cotype in coll. Transvaal Museum. Also in that Museum an interesting, nearly unicolorous dark aberration (♀, same locality, 4th December, 1909) with the median band narrowed, its centre black, its boundaries deep ferruginous, the boundary of basal patch, and most of the veins also marked in deep ferruginous.

Onychia horismodes, n. sp. (Pl. XII, Fig. 29).

♂, 34 mm. Head dark red-brown, middle of face paler, lower part and palpus blackish, first joint white. Antenna red-brown, pectinations moderate. Thorax above dark red-brown, abdomen somewhat paler, dorsally darker—and paler—marked. Legs red-brown, marked with whitish at ends of joints.

Forewing with costa slightly arched, apex moderate, termen strongly oblique, gently curved; reddish brown, with basal and median areas more pronounced red-brown; basal patch bounded by a fine black, pale-edged line from costa at one-fourth, bent in cell, thence running obliquely to inner margin at one-sixth, slightly indented on the veins; median band 3 or 4 mm. in width, bounded by fine black, pale-edged irregular lines approximately parallel with termen, the proximal one considerably thickened in cell; some faint undulate lines in the median band and the areas on either side of it; a small black cell-spot close to antemedian line; a few white spots indicating the subterminal line; an oblique black streak from apex; terminal line black, interrupted at vein ends; fringe concolorous. Hindwing much paler, with the anal area concolorous with forewing, the rest of abdominal margin and base slightly more smoky than apical half of wing; a thick black line from abdominal margin at two-thirds, becoming fine and indistinct and vanishing before costa; the commencements of other lines between this and tornus; a small black discal spot; terminal line and fringe as on forewing. Underside of both wings blurred reddish brown, with discal spots larger than above; hindwing with the postmedian line of upperside present, rather thick, but not black.

Woodbush Village, 15th December, 1909 (C. J. Swierstra). Type in Transvaal Museum. Transkei, 1 ♂ (Miss F. Barrett) in coll. British Museum, duller, without the reddish or vinous tone of the type.

Shape and aspect slightly recall a *Horisme*.

Horisme obscurata, n. sp. (Pl. XII, Fig. 21).

♂ ♀, 31–33 mm. Head fuscous mixed with black; lower part of face black. Palpus black, base beneath pale. Thorax and abdomen above concolorous with wings, the anterior half of each abdominal segment mainly fuscous, the posterior reddish, the crests fuscous with pale tips. Legs pale, speckled with fuscous, foreleg mostly fuscous above.

Forewing with termen weakly subcrenulate; light reddish brown traversed by many lines of fuscous or blackish, the veins in places (especially the median) with elongate dark spots or dashes; a small basal area slightly darkened, containing one or two lines, its limiting line curved, followed by a very narrow band of the ground colour; two or three thick, rather ill-defined darkish lines between this and the median area; median band moderately broad, formed much as in *Camptogramma stellata* Guen., in the ♀ more or less infuscated except a narrow bar down the middle, in the ♂ indicated chiefly by the traversing lines and by some darkening and thickening (especially costally) of those which bound it; the usual rivulet band distally to the median band, bounded distally by a dentate line which is only strong at costa and as teeth on the veins; subterminal line pale, lunulate-dentate, sometimes rendered distinct by dark shading on either side; discal spot indistinct; terminal dark line interrupted at vein-ends and almost interrupted midway between veins; fringe nearly concolorous, slightly dark-chequered opposite the veins. Hindwing with termen moderately crenulate; marked similarly to that of *Camptogramma stellata*, costal edge sometimes pale. Underside paler, less reddish (more grey), similarly but more weakly marked; cell-spots distinct.

Barberton, 20th December, 1910, type (♀) in coll. A. J. T. Janse; 19th December, 1910, cotype (♀) in coll. L. B. Prout, Pretoria, 24th November, 1910 (C. J. Swierstra), ♂ in coll. L. B. Prout. Transkei (Miss F. Barrett) in coll. British Museum and coll. L. B. Prout.

An obscure species, apparently hitherto overlooked. Sir George Hampson several years ago gave the MS. name of *obscurata* to Miss Barrett's specimens, but it has remained unpublished. The termen of the hindwing is about as strongly crenulate as in *H. minuata* Walk., therefore more so than in the European allies.

Horisme filia, n. sp. (Pl. XII, Fig. 36).

♂, 21 mm. Face and palpus blackish fuscous, palpus at base paler. Head, thorax, and abdomen concolorous with wings.

Wings light reddish brown rather uniformly irrorated with fuscous, leaving a narrow, bisected pale band on either side of a very slightly darkened median band, markings indistinct, consisting of numerous transverse lines. Forewing with termen smooth; basal area rather red, bounded by an angulated line; median band fully one-third of wing, placed slightly nearer the distal than the basal extremity, its boundary lines and one in its centre somewhat thickened costally, the proximal gently curved and sinuous, the distal incurved between radials and slightly in posterior part, and with inconspicuous distally-directed teeth throughout; cell-spot small, indistinct; subterminal pale line very slender, indistinct, dentate, placed very near termen; terminal dark line interrupted by pale dots on the vein-ends; fringe greyish fuscous with a slender pale line at base. Hindwing with costa moderately long, termen crenulate, very slightly prominent about M^1; without the reddened basal area, otherwise like forewing, the distal margin of medium band (in accord with the contour of the hindwing) slightly more prominent at R^3–M^1. Underside less reddish, basal and median areas not differentiated, their distal boundary-line rather thick, the pale band beyond paler, broader, not bisected; cell-spots rather larger and more conspicuous than above; hindwing with a small dark blotch on submedian fold near termen.

Durban, 8th April, 1909 (G. F. Leigh). Type in coll. Transvaal Museum.

A very small species, of rather Eupitheciid aspect, but with the termen of forewing not specially oblique, the hindwing not short, its termen crenulate. Meyrick merges *Horisme* in the Eupitheciid genus *Eucymatoge*, which is biologically precarious, even though the present species might seem to lend some colour to the union.

Eccymatoge, n. gen.

Characters of *Eucymatoge* Hb. as defined by Meyrick (Trans. Ent. Soc., Lond., 1892, p. 67) and Turner (Proc. Roy. Soc., Victoria, xvi, 247, 1904), but with the termen of the hindwing dentate and its discocellulars biangulate, R^2 arising nearer to R^3 than to R^1. Face in both the known species apparently without definite cone, only a little rough-scaled.

Type: *Hydriomena callizona* Lower = *Eucymatoge callizona* Turner (Proc. Roy. Soc., Victoria, xvi, 250).

As this is the "*Eucymatoge*, Section III" of Turner, *loc. cit.*, a detailed diagnosis is unnecessary. Differs from *Coenocalpe* Hb. (type *lapidata*, Hb.) in the better developed abdominal crests and the dentate termen of hindwing. Possesses, like *Collix* Guen., a discocellular spot of strongly raised scales on forewing.

Eccymatoge melanoterma, n. sp.

♂, 26 mm. Face reddish brown mixed with black. Palpus blackish, first and second joints pale beneath. Antennal ciliation minute. Thorax dorsally reddish brown, mixed with fuscous in front; abdomen dorsally reddish brown with a whitish band at base, followed by a fuscous one. Fore and middle legs above fuscous, pale-spotted at ends of joints.

Forewing shaped as in a moderately elongate *Eupithecia*, apex acute, termen feebly subcrenulate; red-brown with costal edge to about two-thirds fuscous; transverse lines very indistinct, apparently somewhat broken into spots, oblique outwards from costa, bent about SC, incurved posteriorly to cell, two following the cell-spot the least indistinct; cell-spot large, black, slightly raised, extending nearly the length of the discocellulars; a dark mark near and a smaller one at tornus; terminal line black, interrupted at vein-ends (fringe defective). Hindwing with costa rather long and very straight; slightly paler than forewing, except along inner margin, where the beginnings of lines are traceable, those near tornus almost merged into a dark spot; terminal dark line interrupted at vein-ends. Underside of hindwing better marked, a rather strong dark discal spot and strongly angled postmedian line well discernible.

Haenertsburg, 7th December, 1909 (C. J. Swierstra). Type in coll. Transvaal Museum.

The type is unfortunately rather rubbed, but easily distinguishable by the structural characters. It has quite the facies above of a *Collix*, but cannot be mistaken for one if the palpus, antenna and hindwing venation be taken into account; it is, moreover, much smaller than the only two known African *Collix* (*foraminata* Guen. and *inaequata* Guen.).

Eupithecia hypophasma, n. sp. (Pl. XII, Fig. 3).

♂, 20 mm. Head and palpus grey, mixed with ferruginous and fuscous. Antennal ciliation minute. Thorax and abdomen dorsally reddish brown, the former with an anterior transverse fuscous band, the latter marked with fuscous at the extremities of the segments and with a narrow mediodorsal pale line; the crests minute, mainly whitish.

Forewing with costa nearly straight, termen rather strongly oblique; reddish brown or slightly ferruginous (colour of typical *E. vulgata* Haw.), paler (but with fuscous speckling) in middle of wings, especially in cell and between radials; costal edge fuscous; discal spot nearly as long as $DC^{2\text{-}3}$, not very thick; antemedian lines nearly obsolete, traceable from posterior margin to near cell as two thick lines of slightly darker red-brown than the ground, placed at about two-fifths; postmedian indicated by slight dark shading before a pale line which, commencing at costa just beyond two-thirds, bends sharply outwards from SC^5 to R^1, is right-angled on R^1 and thence runs nearly parallel with termen; a pale, somewhat interrupted line runs obliquely from below apex, touches the pale postmedian at about R^3, and thence runs close beside it (separated only by a fine weak line) to the posterior margin; an indistinct slender pale subterminal line; terminal line blackish, interrupted at vein-ends, followed by a pale line at base of fringe; proximal part of fringe otherwise dark greyish, distal part slightly paler. Hindwing rather narrow, whitish grey, mixed with ferruginous and fuscous in abdominal and distal areas; a subterminal line consisting of large confluent dark spots on the veins; indications of a cell-spot and curved median line (the latter thicker and more distinct in a cotype); terminal line and fringe as on forewing. Underside of both wings whitish grey, the forewing except at inner margin dark-suffused as far as the postmedian line; forewing with a double whitish postmedian line and whitish terminal band (broadest costally), these separated by a narrow fuscous band, discal spot distinct; hindwing with distinct discal spot, two thick but rather weak lines proximally thereto, two thick and strong (composed of confluent large spots) distally, and a fine, weak, interrupted line between these latter.

Haenertsburg, December, 1909 (C. J. Swierstra). Type (9th December) in coll. L. B. Prout; cotypes in coll. L. B. Prout and Transvaal Museum.

Perhaps related to *regulosa* Warr. (Novit. Zool., ix, 512), from British East Africa. The sharply marked underside is characteristic.

Eupithecia atomaria, Warr. (Pl. XII, Fig. 33).

The figure was prepared, and a description added, under the impression that this was a distinct species, or at least a local race. It may yet prove to be the latter, as all the Transvaal examples I have seen are rather smaller, lighter and weaker-marked than Warren's type. But as I have not yet seen further material from British East Africa, whence Warren (Novit. Zool., ix, 510) described it, and the same author (*ibid.* xii, 392) mentions also a lighter (but larger) example from the Ivory Coast, I think it better to suppress the new name until comparisons have been made, and merely record that the figured specimen is from Haenertsburg, December, 1909.

Eupithecia rubiginifera, n. sp. (Pl. XII, Fig. 26.).

♀, 21 mm. Head and body whitish grey, slightly tinged with ochreous, more or less strongly irrorated with blackish fuscous, base of abdomen whitish grey. Legs more or less blackish above, ringed with white at the ends of the joints.

Wings normally shaped. Forewing whitish grey irrorated with fuscous, the markings dark fuscous; a small basal patch, strongest costally;

a subbasal slightly curved band, distinct as a large spot at costa , one in middle and one at posterior margin, vague between ; a broader (1 mm.), but also in places vague band marking the commencement of the median area, narrowest but darkest on the margins ; a large spot on costa and a nearly obsolete dentate line (accentuated only by blackish marks on the veins running proximal from the teeth of the line) marking the end of the median area ; a double whitish mark on costa beyond (the beginning of a postmedian pale band) ; a rust-coloured cloud between the radials, commencing at the end of cell and fading out just before the subterminal line ; some slighter rust-coloured shading at costa, and between subterminal line and termen except at apex ; subterminal line white, forming a W on a dark apical cloud (sharp teeth basewards on SC^4 and SC^5), then parallel with termen to M^1, toothed basewards on medians but subobsolete, finally thick and curving to tornus, running out as a white mark across tornal fringe ; terminal line black, interrupted by white spots at vein-ends ; fringe pale grey, blackish at apex and dark-spotted opposite veins. Hindwing whitish grey, almost unmarked ; a weak discal spot ; a slight darkening in distal one-third ; terminal line and fringe nearly as on forewing but less strongly marked. Under surface of forewing with a black cell-spot, which is obsolete above ; otherwise only marked at costa, where the median area shows a succession of four quadrate blackish spots alternating with three pale ones and the postmedian area the beginning of the pale, dark-divided line, and distally, where a darkish suffusion renders visible from costa to M^1 a lunulate-dentate pale subterminal line. Under surface of hindwing with elongate cell-spot, weak, interrupted antemedian and median lines (the latter just distally to the cell-spot, touching its posterior end) and a weak curved band parallel to termen, accompanied proximally by an elongate fuscous stroke on each vein.

Haenertsburg, 8th December, 1909 (C. J. Swierstra). Type in coll. Transvaal Museum.

Eupithecia brachyptera, n. sp. (Pl. XII, Fig. 8).

♀, 17 mm. Face grey, mixed with black. Palpus mostly black, base beneath pale. Vertex greyish fuscous. Thorax and abdomen greyish fuscous above, thorax darkened anteriorly, abdomen belted with blackish, crests strongly developed.

Forewing relatively short and broad, termen moderately curved, not very oblique anteriorly ; grey, faintly tinged with reddish ochreous, and traversed by indistinct darker grey lines ; subbasal line angled in middle (intermediate ones somewhat rubbed) ; the one which crosses the cell-spot and the next three (completing the median area) sharply outangled in cell ; cell-spot rather large, black ; the pale, bisected band distally to median area becoming faint in anterior part of wing, its distal half throughout concolorous with its proximal ; subterminal line whitish, dentate ; terminal line rather thick, black, narrowly interrupted by pale spots at vein-ends ; fringe pale grey, with large darker spots in proximal half at vein-ends. Hindwing paler, especially at costa, with weak traces of about six wavy darker lines ; cell-spot obsolete. Under surface of forewing lighter than upper, costal edge fuscous at base, pale spotted with fuscous in middle ;

discal spot as above, postmedian line rather thick, curved, obsolete posteriorly, pale double band nearly as above, distal area slightly darkened, containing a pale subterminal line; of hindwing slightly whiter than above, with a strong black discal spot and the lines better developed than above.

Pretoria, 31st December, 1910 (C. J. Swierstra). Type in coll. Transvaal Museum.

Of about the size and shape of the European *E. haworthiata* Doubl., perhaps even slightly shorter in the forewing. The only African species with which it may be compared is *E. connexa* Warr. (Novit. Zool., vi, 297), which—although the author does not mention the fact—has about the same wing-form, but which is much browner in tone, with the pale band distally to the postmedian broader, in its distal half rufescent, and markedly outcurved between R^3 and M^2.

Aspilatopsis gloriola, n. sp. (Pl. XII, Fig. 19).

♂ ♀, 32–36 mm. Face and palpus deep rosy, the former with patch of light greenish in middle of forehead. Vertex, antenna, thorax, and abdomen mainly light greenish, thorax deep rosy medio-dorsally and marked with rosy beneath. Legs mostly rosy, excepting tarsi.

Forewing light shining bronzy green, with costal edge and fringe rosy; a rosy mark from base; an oblique snow-white line from termen, indented on R^2, R^3, and M^1, becoming weaker, not traceable beyond SM^2; a broad rosy shade anteriorly to this line; termen sometimes suffused with rosy. Hindwing pale shining grey, with indistinct paler median line and pinkish fringe. Underside of both wings paler, forewing with the rosy costa less bright but more diffuse, the oblique markings nearly obsolete.

Woodbush Village, 13th December, 1909 (C. J. Swierstra). Type (♀) in coll. L. B. Prout; other examples from Pretoria (1 ♀, 4–17th December, 1900, Dr. Breyer), and "Transvaal" (5 ♂) in coll. British Museum; also in coll. Transvaal Museum.

Apparently similar to *cursaria* Dewitz (Nova Acta Acad., Leop., xlii, 86, t.3, f.18), which I have not seen, but less robust, quite differently coloured and with the white line more dentate. Not quite a typical *Aspilatopsis*, the termen of forewing not being gibbous and the thorax above being even more densely clothed, with better developed metathoracic crest. Antennal pectinations shorter in both sexes, those of the ♀ slender, only about twice as long as width of shaft. The narrow wings and peculiar pattern suggest an approach to *Hebdomophruda* Warr., which is rougher-scaled, with SC^5 coincident, not SC^3, etc. The abdomen dorsally is peculiar in all the specimens I have seen—though some are in beautiful condition; the clothing does not reach to the end of the segments, but leaves a posterior exposed membranous patch.

Apleroneura devia, n. sp. (Pl. XII, Fig. 12).

♂, 32 mm. Head purple-brown. Palpus more ferruginous-tinted, slightly longer than in *tripartita* Warr., the type of the genus (Novit. Zool., v, 35). Thorax purple-brown above; thorax beneath and abdomen somewhat paler.

Forewing with termen not elbowed at R^3; light grey-brown with slight purple flush, finely strigulated with darker, terminal area slightly paler than basal and median; lines fuscous brown; antemedian not sharp, rather thick, curved anteriorly, followed by narrow olive-brown shading; postmedian from costa 2 or 3 mm. before apex, very faintly incurved between radials, and more so from behind R^3 to M^2, then vertical to posterior margin; preceded by olive-brown shading nearly to the black discal spot; terminal line brownish, quite weak; fringe tinged with brown. Hindwing only extremely weakly elbowed at R^3, inappreciably at the other veins; concolorous with terminal area of forewing; discal spot present, small; no other markings except the beginning, at towards three-fourths of inner margin, of the brown postmedian shade. Under surface rather strongly tinged with rufous, excepting the inner-marginal area of both wings; the dark strigulation or speckling present; cell-spots weak; no other markings.

Woodbush Village, 11th December, 1909 (C. J. Swierstra). Type in coll. L. B. Prout; cotype in coll. Transvaal Museum.

The nearly smooth wing-margins suggest *Aspilatopsis* more than *Apleroneura*, and vein C of the hindwing is oppressed to the cell for rather longer than is typical in the last-named genus. On the other hand in *Aspilatopsis* ♂ vein SC^5 of forewing is present, whereas in the present ♂ it is absent, and SC^4 runs to the apex, exactly as in typical *Apleroneura*. There are certainly too many generic names in use in this group, and possibly the distinction between *Aspilatopsis* and *Apleroneura* will prove not to hold, or both may even have to sink to *Nopia* Walk., of which I only know Walker's poor (♀) type, though I have seen an unnamed ♂ from Grahamstown which is probably a close ally and has SC^5 present; pending an exhaustive revision, *Apleroneura* is clearly the correct location for *devia*. SC^2 of forewing approaches, but does not touch the stalk of SC^{3-4}.

Apleroneura nigrapex, n. sp. (Pl. XII, Fig. 1).

♀, 42 mm. Head and palpus brown, slightly reddish; face only very slightly tufted below. Antenna dull brown, subserrate. Thorax above dull brown, slightly reddish, beneath redder; abdomen paler than thorax, beneath redder than above.

Forewing ample, costa strongly arched near base, then straight to near apex; termen nearly vertical at first, bluntly bent in middle, becoming moderately oblique; dull brown tinged with reddish, irrorated with black, especially in basal and costal regions; first line dark reddish brown, starting from a black spot at two-sevenths costa, oblique outwards to cell, less strongly oblique outwards to submedian fold, strongly inbent on SM^2 and vertical to posterior margin; this line is slightly dentate outwards on the veins and accompanied proximally, from SC to posterior margin, by a very fine pale line; discal spot rather large, black; postmedian line at nearly three-fourths, bluntly lobed outwards between radials, accompanied proximally by a black spot on costa and distally throughout its course by a fine pale yellowish line, to which again follow some blackish spots between the veins; a thick oblique black mark from apex. Hindwing with costa long, apex rounded, termen waved; paler than forewing, the colour formed of an even admixture of pale, dark and reddish scales and with sparse black dusting; traces of a pale curved postmedian line from abdominal margin near tornus to M^1, finely and weakly edged with red-brown proximally; cell-spot very indistinct. Underside of both wings strongly reddened, cell-spot of forewing less strong than above; postmedian of both wings almost entirely obsolete, followed in costal half (especially of hindwing) by a broad strengthening of the black irroration.

Waterval Onder, 21st November, 1910. Type in coll. A. J. T. Janse.

Nearly related to the preceding and the following species, but differing in shape and colour, in its larger size and in the black apical marking of the forewing.

Apleroneura chromatina, n. sp. (Pl. XII, Fig. 27).

♀, 35 mm. Face red, mixed with black; the cotype with a projecting cone of scales which is lost in the type. Palpus shortish, lighter red. Antenna nearly simple, weakly subserrate. Crown coloured as face, a pale fillet between antennae. Thorax, abdomen, and legs concolorous with wings.

Forewing bright light red-brown, coarsely and irregularly speckled with black; first line from one-third costa to about two-fifths posterior margin, scarcely darker red than ground-colour, only visible in some lights (the artist has not noticed it); discal spot rather large, black; postmedian line at nearly three-fourths, slightly curved anteriorly, then nearly straight, darker red than ground-colour, narrowly edged with pale yellow distally; terminal area from this line slightly darkened. Hindwing very slightly paler, with moderate black discal spot and nearly straight postmedian line continuing that of forewing and reaching inner margin at three-fourths. Under surface similarly coloured, slightly paler towards base of both wings and especially from submedian fold to posterior margin of forewing; cell-spots weaker than above; postmedian line of both wings present but faint, reddish without yellow edging.

Waterval Onder, 2nd November, 1910. Type in coll. A. J. T. Janse. Karkloof, Natal, 20th February, 1897 (G. A. K. Marshall), a smaller, slightly less bright ♀ in coll. British Museum, with the postmedian line rather inbent in posterior half, may safely be referred to the same species. Its tone is slightly more purplish, and the pale line is whitish violet instead of yellow.

A series of six males, likewise from Karkloof, 4th and 6th February, 1897, probably belongs here also, but their aspect is so different that I have hesitated to include any reference to them in the type description. They are lighter, browner, the lines brown, not red, not accompanied distally by yellow or whitish line, the distal area of forewing on the other hand (except extreme termen) light as in *devia*, postmedian line on forewing considerably nearer to termen, on hindwing only distinct in abdominal half of wing. They stand in coll. British Museum as ♂ to *Nopia soprinataria* Walk., which I regard as evidently wrong; they show all the structure of ♂ *Apleroneura*, though with smooth termen to hindwing. The colour differences, it should be observed, are roughly parallel to those of *A. admiranda* Warr. (Novit. Zool., xii, 406; ♂ = *Nopia admiranda* Warr., ♀ = *Nopia soprinataria* Warr., l.c. nec Walk.).

Apleroneura epione, n. sp. (Pl. XII, Fig. 15).

♂ ♀, 24–28 mm. Face and palpus brown above, whitish beneath. Vertex, antenna, thorax, and abdomen concolorous with wings, front of thorax ferruginous.

Wings whitish, sometimes more tinged with ferruginous, sometimes with yellow, always coarsely speckled and strigulated with brown, ferruginous or fuscous and with the markings of the same colour. These consist on forewing of a darkening of costal margin from base nearly to first line, an oblique antemedian line from costa at three-sevenths to posterior margin at or before one-third, most oblique from SM^2 to the latter margin, a rather large cell-spot, a postmedian line from close to apex to posterior margin at about three-fourths, more or less strongly incurved in posterior half and again curving basewards at posterior margin, and an interrupted terminal line; fringe concolorous, with dark line distally. Hindwing without first line. Under surface still more coarsely speckled, antemedian line weak or wanting, postmedian of forewing double.

Barberton, 2nd December, 1910, type in coll. A. J. T. Janse. Other examples from Pretoria (December), Waterval Onder (November), Durban (April), Karkloof (20th February, 1897), White River, Eastern Transvaal (December, 1906, and January, 1907), and Mashonaland, in coll. A. J. T. Janse, L. B. Prout, Transvaal Museum, British Museum, Oxford Museum. It seems curious that so prevalent a species should have escaped notice, but as Warren labelled the Oxford Museum examples "n. sp." and I have myself failed to find any description, I think it safe to treat it as new. It is interesting that the specimens at Oxford were collected just a century ago by that prince of naturalists, W. J. Burchell; a ♀ (the only one of this sex yet known to me) is dated 9th November, 1811, and was taken at the confluence of the Vaal and Riet Rivers.

The structure agrees in most respects with that of *tripartita* Warr., vein SC^5 being absent in the ♂ but present in the ♀, the antenna in the ♀ shortly bipectinate, etc. But the face is smooth, lacking the small cone of scales which is present in perfect specimens of that species, so that the present resting place of *epione* is only provisional. The shape of the wings is not quite typical; the strongly gibbous termen of the forewing and slightly sinuous termen of hindwing closely resemble *Aspilatopsis*, but almost the same form is shared by *admiranda* Warr., which I consider an *Apleroneura*. The wing-shape and the course of the postmedian line slightly recall the Palaearctic *Epione apiciaria* Schiff. The species varies in colour and slightly in the depth of the incurvature of postmedian line. The Burchell ♀, already mentioned, is the brightest specimen, and with the two lines rather weak.

Heterostegane rectistriga, n. sp.

♂ ♀, 23–24 mm. Head and collar ochreous mixed with bright ferruginous. Front of thorax and costal edge of forewing darker ferruginous, usually mixed with fuscous. Body and wings ochreous, varying a little in depth. Wing-markings ferruginous, usually in part mixed with fuscous. Forewing with four, hindwing with three transverse lines, the first and third on forewing sometimes weak or even wanting, the distal on both wings broadened into a narrow fascia, nearly straight (at least on forewing) usually slightly dentate at its edges; the other lines slightly wavy (especially on hindwing), the first two of forewing bent at SC; terminal line interrupted. Underside of forewing suffused from base to second line; markings otherwise as above.

Pretoria, 19th February, 1907. Type (♀) in coll. A. J. T. Janse; cotypes, October, December, and February in coll. L. B. Prout and Transvaal Museum; also a few in coll. British Museum from localities in the same district.

Differs from *indularia* Guen. in the strong straight subterminal band and absence of terminal blotches; discal dots also wanting.

Stegania inaccurata, n. sp. (Pl. XII, Fig. 28).

♀, 22 mm. Face and palpus ochreous, palpus moderately rough. Antenna ochreous, paler distally, bipectinate to near apex with moderate, stiff branches. Thorax and base of abdomen ochreous, abdomen paler posteriorly and beneath.

Forewing ochreous, darker dusted, with darker, browner lines; first oblique outwards from costa at one-fourth, strongly bent on SC, thence vertical, but with an inward curve in submedian area; second from costa beyond three-fourths, bisinuate; a weaker, thicker, nearly straight median shade, crossing an indistinct dark discal spot; termen with small black dots between the veins; fringe concolorous. Hindwing whitish, only along the abdominal margin and distally to the postmedian line ochreous; no proximal line, median shade obsolete in costal half of wing (in the cotype obsolete throughout), postmedian line nearly parallel with termen, weak or obsolete at its costal extremity; terminal dots as on forewing; no discal spot. Underside of forewing whitish ochreous with costal and rather broad distal areas ochreous, the costal with beginnings of dark lines at nearly one-third and at beyond two-thirds (not corresponding with upper surface); of hindwing whitish, shaded with ochreous along costa and abdominal margin and more broadly distally, with a complete postmedian line and a faint fine median crossing the cell-spot; both wings with small but distinct cell-spots.

Haenertsburg, 4th December, 1909 (C. J. Swierstra), type in coll. Transvaal Museum; 6th December, 1909, cotype in coll. L. B. Prout. The latter clearer ochreous and weaker marked, its underside entirely without lines, discal dots minute.

Like *S. eurycraspis* Hampson (Proc. Zool. Soc. Lond., 1910, p. 467), this species is irregular in having the ♀ antenna pectinate, in this resembling the genus *Xenostege*; R^2 of forewing, however, arises from but little above the middle of discocellulars and SC^{1-2} (coincident) from cell (though almost connate with SC^{3-5}), anastomosing strongly with C; in *Xenostege* it is always stalked with SC^{3-5} and oftenest free from C. It seems inexpedient, therefore, to destroy the homogeneity of that thoroughly natural genus by forcing it to include the new species.

Obolcola flavescens, n. sp. (Pl. —, Fig. 24).

♂, 24 mm. Form and arrangement of markings as in certain forms of the type species (*inconclusaria* Walk.), but the ground-colour both above and below of a decided ochreous yellow. Head, collar, base of antenna, front of thorax and base of forewing anteriorly black. Subterminal blotches between R^1 and M^1 very strong and dark on both surfaces.

St. Johns, November, 1909 (H. H. Swinney). Type in coll. Transvaal Museum.

It is impossible on a single specimen to fix the exact status of this form, which may be a species or local race or mere aberration of the very variable *inconclusaria*. It agrees perfectly in structure with that. In any case it requires a separate name.

Obolcola deocellata, n. sp. (Pl. XII, Fig. 2).

♂, 29 mm. Head brown, fuscous-marked at sides, occiput and palpus somewhat mixed with blackish, antennal shaft dark-spotted. Front of thorax black, together with extreme base of costa of forewing. Abdomen with dorsal dark spots.

Forewing with termen slightly straighter and apex appearing slightly sharper than in the other forms, colour nearly as in preceding, somewhat paler, the large round discal mark wanting, postmedian black line or row of dots replaced by a dark ochreous line, bent near costa. Underside without this line, but with the blackish markings intensified.

Waterval Onder, 20th November, 1910. Type in coll. A. J. T. Janse.

The same remarks apply to this as to the preceding, unless its larger size, slightly different shape, spotted abdomen, etc., be more significant. The under surface is extremely like that of the preceding.

Tephrina supergressa, n. sp. (Pl. XII, Fig. 6).

♀, 36–38 mm. Face ochreous, frontal tuft slight. Palpus ochreous, slightly marked with fuscous, paler at base. Vertex and antenna coloured nearly as wings, antenna furnished with quite short pectinations to beyond two-thirds. Occiput ochreous. Collar ochreous-ferruginous. Thorax and abdomen concolorous with wings. Abdomen dark-speckled, with paired black spots on dorsum, at least of second segment.

Wings pale ochreous grey, thickly and coarsely (more slightly before proximal line) speckled with fuscous, veins rather more ochreous, terminal area, for a width of 4 or 5 mm., slightly infuscated, the proximal part of this area, at least on forewing, containing a series of large, slightly darker spots between the veins. Forewing in the type with antemedian line indicated by large blackish spots on SC and M and at posterior margin, postmedian by a series of small vein-dots on fine slight ochreous line, just before the cloudy margin. Hindwing in the type with an ill-defined dark antemedian shade and fine slight ochreous postmedian. The cotype lacks these markings, excepting the faintest traces of the postmedian, but has the marginal shade better defined, and bears a distinct black cell-spot on hindwing. No terminal line. Fringe without dark speckling. Underside nearly as upper, the lines absent in both specimens.

Pienaars River, Pretoria, August, 1902 (C. J. Swierstra). Type in Transvaal Museum. Three Sisters, 22nd February, 1911, cotype in coll. A. J. T. Janse.

It is possible that this species, which is evidently rather variable, may be the ♀ of *inspersaria* Guen., described from a ♂. But Guenee's brief description deviates in several particulars, and if this be his insect he was at fault in placing it in *Scodiona*, which he well diagnoses on the face, palpus, tongue, etc. It is the only *Tephrina* known to me with pectinate antenna in the ♀. Vein SC^1 of the forewing arises out of C.

Macaria nobilitata, n. sp.

♂ ♀, 37–40 mm. Face and palpus bright ferruginous, face with a small cone of scales. Antenna whitish grey, rather sparsely and irregularly speckled with fuscous; cilia in ♂ about as long as width of shaft. Vertex ferruginous, shading off pale anteriorly. Collar and extreme front of thorax bright ferruginous. Thorax, abdomen, and legs concolorous with wings, foreleg darkened above.

Wings ample, shaped nearly as in the large African group comprising *amandata* Walk., *distinguenda* Warr., etc., the crenulation in termen of hindwing weak to very weak, the tooth at R^3 quite slight. Forewing with SC^1 wanting; whitish grey or browner grey with a very faint violet tinge, coarsely and rather irregularly irrorated with fuscous, especially the costal margin and distal area; the veins ferruginous; lines deep fuscous, moderately thick; antemedian from costa before one-fourth, strongly outbent in cell (sometimes with noticeable teeth on SC and M), then oblique inwards, somewhat outbent again on SM^2, reaching posterior margin at about one-fifth; postmedian line from costa at nearly three-fourths, very gently outcurved at first, mostly parallel with termen or inappreciably incurred; cell-spot distinct, elongate; a weak ferruginous median line or shade, right-angled distally to cell-spot, then very gently incurved, touching posterior extremity of cell-spot; an ill-defined ferruginous shade beyond postmedian line, occupying perhaps one-third to one-half of the distal area, but passing gradually into the less ferruginous terminal colour; terminal line black or brown (sometimes weak), interrupted at the veins, thickened between; fringe concolorous with wing, traversed by an indistinct darker grey line. Hindwing without darkened costa, no antemedian line; cell-spot less elongate than on forewing; median line straight, reaching abdominal margin at about three-fifths; postmedian bent anteriorly, less parallel with termen. Underside with ground-colour whiter, veins more broadly ferruginous, costal margin of forewing and terminal area of both wings predominantly ferruginous, the latter usually interrupted with irregular whitish spots and blotches, especially on hindwing in distal half of the area; no antemedian line, postmedian, terminal and cell-spot weaker than above, fringe whiter, sometimes darker-spotted opposite the veins.

Sabie, December, 1911 (W. Grubb). Type (♀) in coll. L. B. Prout; also a second ♀, without exact locality, in coll. L. B. Prout. Piet Retief, 30th August (2 ♂, 1 ♀), and 8th November (1 ♀) in coll. British Museum, collected by R. Crawshay.

Somewhat variable in colour. The type is the whitest form, with strong markings. The three specimens dated 30th August are of a much warmer tone, the markings weaker (especially on termen and fringe), the underside rather more uniformly suffused with ferruginous, and suggest a seasonal form. In one or two at least, the outline of hindwing is so little irregular as to be transitional to that of *Tephrina*.

Macaria vau, n. sp. (Pl. XII, Fig. 16).

♀, 31 mm. Head and body, with palpus, antenna, and legs, light ochreous brown more or less strongly sprinkled with dark fuscous; face and palpus dark-marked above.

Forewing with termen not excised below apex, SC^1 wanting; light ochreous brown, moderately sprinkled with coarse dark fuscous atoms, costal edge from base to near middle more strongly spotted with fuscous; lines weakly darker, greyish brown, arising from quite small dark spots at costa; first from costa at two-sevenths, arising at right angles therewith, but bending and becoming oblique basewards from middle of cell; median from costa just beyond one-half to posterior margin just beyond two-fifths, slightly curved at first, parallel with termen from M^1 onwards; postmedian mixed with bright ochreous, from costa at five-sixths, curved at first, then parallel with termen, finally slightly curved distal but obsolescent; distal area clouded with purplish fuscous, especially on costa near postmedian line, at termen from SC^5 to R^3, and from postmedian line nearly to termen posteriorly to R^3, and bearing a black mark (consisting of two confluent broad wedges) between R^3 and M^1, also a broad oblique dark mark from posterior margin close to tornus, reaching about to M^2; traces of a pale subterminal line amongst these cloudings; discal spot black, rather large; terminal line black, strong, interrupted at veins, thickened midway between them; fringe weakly dark-spotted opposite veins. Hindwing weakly subcrenulate, with slightly stronger tooth at end of R^3; first line wanting, median becoming antemedian, postmedian little beyond middle, with a black marking shaped like the Hebrew letter *vau* from before R^3 to behind M^1 and smaller dark spots on the other veins; the rest nearly as in forewing. Underside rather paler, first line of forewing almost obsolete, postmedian of both wings followed by a rather broad, ochreous-brown, fuscous-mixed band, which is distally dentate on radials and M^1 and connected, particularly in forewing, with a terminal dark blotch between radials; the rest nearly as above.

Thabina, Zoutpansberg District, 19th November, 1905 (C. J. Swierstra). Type in coll. Transvaal Museum.

A rather commonplace-looking species of the large section called by Warren "*Gonodela*" (i.e. *Pharmacis* Hb. = *Godonela* Bsd.); rather similar to *lataria* Walk., postmedian line curved, not angled, the dark mark beyond it on upperside differently formed, the band beneath not quite so broad.

Macaria conventa, n. sp. (Pl. XII, Fig. 25).

♀, 34 mm. Face mixed with fuscous (partly abraded). Palpus mostly fuscous above, pale with a few fuscous spots beneath. Vertex pale ochreous anteriorly, the rest of head infuscated. Antenna pale, speckled with fuscous. Body mostly concolorous with wings; thorax darkened in front and with a pair of dark spots dorsally; abdomen with dark spots laterally.

Wings shaped nearly as in the preceding species, but with the tooth at R^3 of hindwing scarcely appreciable. Forewing very pale ochreous brown, with scattered fuscous dots and small strigulae, basal and median areas, especially the basal costally, with darker, redder suffusion; lines fuscous; first at one-fourth, strongly bent in cell and slightly indented on M and SM^2; median at one-half, rather thick, less dark than first except at margins, nearly straight, but very slightly bent distally to cell-spot and incurved in submedian area; postmedian at three-fourths, finer, nearly parallel with median, but with the curve in anterior half rather stronger; followed by dark purple-fuscous submarginal band, which reaches the termen in anterior half (except at extreme apex) and again almost at tornus, hence enclosing pale oblique apical patch (the spot between SC^5 and R^1 still paler) and a second pale patch from R^3 to tornus; cell-spot dark fuscous; terminal line dark fuscous, thick midway between veins, gradually narrowing towards each vein, interrupted at vein-ends. Hindwing slightly paler; first line wanting; median dark fuscous, direct in its general course, but subsinuate, crossing the dark cell-spot; postmedian dentate outwards on the veins, followed by clouding nearly as in forewing, but containing an additional elongate pale mark from close to tornus to M^2; both wings with some indistinct darker marks in the submarginal band about the middle and from M^2 to posterior margin. Underside similar, antemedian and median lines weaker, submarginal band still darker, apices more clouded with fuscous, the rounded pale subapical spot between SC^5 and R^1 of forewing consequently still more conspicuous.

Three Sisters, 15th February, 1911. Type in coll. A. J. T. Janse.

Another rather ordinary looking species, probably related to the preceding. Near *uvidaria* Swinh. (Trans. Ent. Soc. Lond., 1904, p. 509), but with the median line of both wings quite different, the postmedian of forewing less angled and other slight differences. Vein C of forewing is furcate, as in *uvidaria* (or SC^1 out of C^1), but its costal arm (C) is very weak and slender, and easily overlooked.

Gyalomia, n. gen.

Face scarcely or little protuberant, with appressed scales. Palpus rather short, second joint rough-scaled beneath, third joint smooth-scaled, small, tapering. Tongue developed. Antenna slightly over one-half length of wing, in ♂ bipectinate with long branches which cease rather abruptly, last few joints (about twelve) nearly simple, slightly ciliated; in ♀ nearly simple. Pectus somewhat hairy. Femora glabrous. Hind-tibia in ♂ not dilated, in both sexes with all spurs. Anal tuft in ♂ well developed. Forewing with costa slightly arched, apex moderate, termen smooth, moderately oblique, very gently curved; cell about one-half, DC very slightly or quite moderately incurved, SC^1 from cell, well free, $SC^{5,2,3,4}$ stalked from well before end of cell, radials normal, M^1 separate. Hindwing with termen almost evenly rounded, with the slightest possible excision between radials and the convexity slightly greater on either side of this excision than towards the angles of the wings; base of costa in ♂ expanded, beneath wide a moderately large fovea partly overlapped by hairs, and C swollen, curved, overhanging a deep scaleless hollow between this vein and SC; in ♀ normal; C diverging rather rapidly after brief approximation to cell; cell about one-half, DC slightly incurved, SC^2 separate, R^2 wanting, M^1 separate.

Type of the genus: *Gyalomia elatina* n. sp.

The species, which are closely allied, show the facies and type of scaling of a small, smooth-margined *Boarmia*, but the structural characters are more nearly those of *Cabera* (= *Deilinia*). The true genetic position is uncertain.

Gyalomia elatina, n. sp. (Pl. XII, Fig. 23).

♂ ♀, 22 mm. Face fuscous, whitish below. Palpus ochreous whitish, marked above with fuscous. Vertex ochreous whitish, occiput narrowly blackish. Antennal shaft black, becoming gradually pale beyond middle. Thorax pale brown-grey, paler beneath, pro- and mesothorax each with two large blackish spots, occupying most of their dorsal area; patagia pale brown-grey, tegulae mostly blackish; abdomen ochreous white, dorsally fuscous at base and belted with fuscous throughout. Foreleg blackish on upper side.

Forewing ochreous white, with fine fuscous speckling in most parts, clouded with brown basally and with brown distal clouding, gradually widening, from R^1 to tornus; lines blackish, thick; antemedian oblique outwards from costa, almost lost in a black irroration which largely overspreads the basal area and is very strong along the median vein; median line slightly curved, from midcosta to before middle of posterior margin; an additional straight, very oblique line starts from the latter margin midway between base and median line, which it joins in cell; postmedian rather more strongly curved and with a weak sinus inwards in middle, where it is thinner and less distinct than at margins; a small dark patch at apex, containing the beginning of a white subterminal line, and narrowly connected with a wedge-shaped dark mark about R^1 which is margined with white; pale subterminal again traceable on the brown terminal cloud; cell-spot small but distinct; the white area distally and posteriorly hereto almost entirely free from dark dusting; terminal line black, interrupted at vein-ends; fringe dark-mottled. Hindwing ochreous white, dusted like forewing and irregularly clouded with pale brown distally; a blackish mark at base, a slightly curved antemedian line continuing the median of the forewing; a weaker postmedian from abdominal margin, losing itself towards middle of wing; a weak subterminal, becoming thick and strong towards tornus; discal spot distinct; termen and fringe as on forewing. Forewing beneath blurred ochreous whitish, with costal edge suffused with greyish; median line present, accompanied by obscure clouding; cell-spot distinct; a fuscous distal border of 2–3 mm. width, containing traces of a pale subterminal. Hindwing beneath cleaner whitish, marked like forewing except the obscure clouding; pale subterminal line rather more distinct.

Pinetown, Natal, 10-11th December, 1908 (G. F. Leigh). Type (♂) in coll. L. B. Prout; cotype in coll. Transvaal Museum. Kaapmuiden, Transvaal, October, 1909 (A. T. Cooke), a ♀ in coll. British Museum. The latter has the black markings of the basal area of the forewing more blurred and the median line of hindwing more distinctly continuous to middle of wing. A rather larger, somewhat worn ♀ from Stanger, Natal, in coll. British Museum is almost certainly also referable here.

Gyalomia aquaemontana, n. sp. (Pl. XII, Fig. 7).

♂, 20–22 mm. Face pale ochreous grey, irrorated with fuscous, narrowly fuscous above. Palpus darkened above and on outer side. Vertex grey, irrorated with fuscous, occiput narrowly blackish. Antennal shaft blackish, becoming lighter distally. Thorax and abdomen reddish brown, dorsally belted with blackish.

Forewing pale reddish brown irrorated with darker; costa to SC fuscous, interrupted by many pale spots or short lines; transverse lines blackish; antemedian from posterior margin at one-fifth, oblique to SC, incurved in its middle; postmedian strongly oblique, from middle of posterior margin to costa at three-fourths, outangled on submedian fold, slightly incurved above it, ill-defined at costa, making a slight proximal curve; a median shade from posterior margin following the same course as postmedian, but lost in middle of wing; a thick black shade distally to the postmedian, from near apex to submedian fold, projecting some teeth distal and finely pale-edged; cell-spot black; a terminal black line interrupted at vein-ends; fringe chequered with dark opposite the veins. Hindwing with thick dark mark close to base and two rather straight lines continuing the median and postmedian of forewing but interrupted at costa; a much interrupted dark line, or series of elongate marks, nearer termen; termen and fringe as on forewing. Underside pale shining greyish; costal edge of forewing marked similarly as above, but more weakly, and with broader pale intervals in distal part; both wings with small cell-spot and dull fuscous distal border of 2–3 mm. width.

Waterberg District, 1898–99 (v. Jutrzencka). Type in coll. L. B. Prout; cotypes in coll. Transvaal Museum and coll. British Museum.

Ectropis delosaria Walk. ab.
rubidior, n. ab.

♂, 37 mm. Larger than typical *E. delosaria* Walk. (List Lep. Ins., British Museum, xxvi, 1541 = *crassa* Warr., Novit. Zool., vi, 305) and with the ground-colour very much more reddish and the fuscous irroration rather less deep. Forewing with antemedian line clearly defined, not much further from base on costa than on posterior margin, while in typical *delosaria* it is usually obscure and more oblique, sometimes partly double, usually without a strong outward curve in postmedian area, which is very marked in ab. *rubidior*; postmedian line more deeply dentate, and with deeper sinus in submedian area; no median shade. Hindwing without median (or antemedian) shade, postmedian as in forewing. Abdomen without distinct dorsal spots.

Waterval Boven, December, 1898 (Dr. Breyer). Type in coll. Transvaal Museum.

Should all, or the majority, of the above distinctions hold for other specimens this may prove a distinct species, but except that the costa is (scarcely appreciably) straighter, I can find no structural difference. The smooth scaling, long glossy fringes, etc., in both forms somewhat recall the *Selidosema* group.

Boarmia ectropodes, n. sp. (Pl. XII, Fig. 39).

♂, 28 mm. Face fuscous in middle, whitish above and narrowly below. Palpus whitish at base and tip, second joint mostly fuscous. Head and antennal shaft whitish, pectinations moderately long. Thorax and abdomen whitish, the latter with black belts dorsally at the extremities of the segments.

Wings dirty white, irrorated with fuscous, the forewing slightly more suffused basally and costally, costal edge rather strongly dark-spotted. Forewing with antemedian transverse lines scarcely distinguishable, almost lost in the general suffusion, apparently two in number, lunulate-dentate; median line equally weak, but its course better defined on account of the clearer area which follows it; arising on mid-costa with a dark outward curve, it is toothed on the radials, then oblique basewards, with another outward bend on SM^2, reaching posterior margin about the middle; postmedian line at somewhat beyond two-thirds, sharply dentate outwards on the veins, blackened at R^3 and M^1, incurved in submedian area; followed distally by a similar but rather weaker line; subterminal line rather straight, weakly indicated by dark shading on either side; terminal dark line faint and interrupted, but with a conspicuous black spot in each cellule; fringe white, very feebly chequered with pale brownish. Hindwing similar, the postmedian line median, less black-marked at R^3 and M^1, strongly oblique towards tornus after the submedian incurvature; the shade which follows it broader and more diffuse than on forewing. Underside dirty white, slightly suffused (especially the forewing and costa of hindwing) with a fuscous tinge; entirely without markings.

Three Sisters, 23rd February, 1911. Type in coll. A. J. T. Janse. A second ♂, rather more clearly and sharply marked, labelled "Cape" in coll. British Museum, could with confidence be referred to the same species but that it looks rather rougher-scaled and has the termen of forewing slightly less oblique.

Hindleg thickened, with hair-pencil, tarsus about one-half tibia. Antenna somewhat damaged, but the pectinations seem to decrease in length rather abruptly. Forewing with SC^{1-2} coincident, anastomosing at a point with stalk of SC^{3-4}.

Alcis divisaria Walk.* ab.

crassilineata, n. ab. (Pl. —, Fig. 30).

♂ ♀, 46–54 mm. Differs from typical *divisaria* in its more uniform coloration, the median area not paler, the terminal not or scarcely variegated, the pale subterminal line entirely or almost entirely obliterated; but especially in the much thickened, deep black lines. The underside shows the lines equally thick, but much less intense, the discal spots (as in the other forms of the species) rather large and conspicuous, no other definite markings.

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* *Boarmia divisaria*, Walk. (List Lep. Ins. British Museum, xxi, 366) = *Boarmia separaria* Möschl. (Abh. Senck. Nat. Ges., xv, 92) = *Alcis rufilimes* Warr. (Novit. Zool., vi, 51) = *Alcis ac tangula* Warr. (*ibid.* xii, 36) = *Boarmia* (*Hemerophila*) *acygonia*, Hampson (Proc. Zool.

Barberton, 26th February, 1911 (Miss Williams). Type (♂) in coll. Transvaal Museum. Durban, May, 1905 (Marley), August, 1902 (G. F. Leigh), ♂ and ♀ respectively, in coll. British Museum.

A striking form, which at first sight might suggest a separate species, but which agrees in all essentials with the type. The specimen figured is of a darker, redder brown than any *divisaria* that I have seen, but I have not emphasized this, as the Durban examples are of a normal tone. The fovea in this species is not very highly developed; the foretibia unusually densely tufted, midtibia in ♂ clothed with long hair, ♂ hindtibia not dilated; SC^{1-2} of forewing are always stalked, though variably in extent. The hindtibial character is clearly not generic, the venational may be; I therefore provisionally accept a distinction noted by Meyrick (Trans. Ent. Soc., Lond., 1892, pp. 100, 103, 105), and assign to *Alcis* those species of *Boarmia* (auctt.) which fall into Meyrick's *Selidosema* (SC^1 and SC^2 distinct entities), retaining in *Boarmia* those of his *Diastictis*, in which—in simpler phraseology than that adopted by Meyrick—SC^{1-2} are coincident, though sometimes connected with other veins by short bars in the apical part of the wing. I fear, however, that *Alcis* will sink to *Cleora* (Curt., nec Meyr.), in which some of the ♂ characters are a little different, the termen of the hindwing not crenulate, etc., but for which I have not yet discovered any definitely generic distinction.

Alcis sexorbata, n. sp. (Pl. XII, Fig. 40).

♂, 43 mm. Face rather smooth, black, slightly mixed with deep reddish. Palpus short, moderately rough; dark reddish, mixed with black, beneath whitish at base. Vertex, occiput, and base of antennal shaft white. Antenna with long pectinations, only a few segments at apex simple. Fore and middle legs mostly blackish above and on inner side; hindleg whitish, tibia not dilated. Thorax and abdomen concolorous with wings, first three segments of abdomen with paired dark dorsal spots, fourth to eighth each with single black mediodorsal one at its anterior extremity.

Forewing with fovea present; termen smooth, cell rather longer than one-half, SC^{1-2} short-stalked, separating opposite origin of SC^{3-5}; dead white, irrorated and in places slightly clouded with brown; costal area moderately speckled with fuscous; lines represented by blackish spots on costa and veins, the costal ones large, reaching to SC; first line at one-fifth; median before one-half, its central spot placed at base of M^2; postmedian from about two-thirds costa, commencing obliquely outwards;

Soc. Lond., 1910, p. 473, t. 39, f. 37). The last two synonyms are new, based on examination of the types. The first two, given by Swinhoe (Trans. Ent. Soc., Lond., 1904, p. 534) I have personally checked. Möschler does not describe the exact form of the postmedian line of the forewing, but his description is otherwise perfect, and I have the species from the Gold Coast, whence he described his *separaria*.

discal spot faintly shadowed in grey; large, roundish dots on termen between the veins; fringe concolorous. Hindwing with termen gently waved, very slightly crenulate between radials; cell almost three-fifths; first line wanting, median weak, cell-spot distinct, blackish. Underside white; forewing suffused with brown and with some longitudinal blackish marks on costal edge, corresponding to the large spots of upperside; a large round blackish cell-mark; a similarly sized, slightly less round subapical spot on costa; transverse markings wanting, only a minute black dot on R^1 remaining of the postmedian; hindwing with a round blackish cell-mark, considerably smaller than on forewing; both wings with terminal dots much smaller and weaker than above.

Durban, 8th October, 1902 (G. F. Leigh). Type in coll. L. B. Prout; cotype in coll. Transvaal Museum.

Differs from true *Alcis* in having the tongue rudimentary or perhaps entirely absent, and in the rather long cells, while the face is unusually flat; but it does not seem possible to refer it to the *Biston* section. In view of the multitude of generic names already in existence in the *Boarmia* group, I prefer not to erect a new genus until I can study them in more detail.

Haggardia mailaria caeca, n. subsp. (Pl. XII, Fig. 11).

♂, 46 mm. Differs from the Congo form* in the entire absence of the large discal spot on both wings above and its smaller size beneath. Otherwise scarcely distinguishable. Under surface of forewing with a postmedian line of black dots (or very short dashes) on the veins, forming a slight outward curve from costa to R^3 and a still slighter inward curve from R^3 to posterior margin; of hindwing with similarly formed postmedian, following about the same course as that of the upper surface from abdominal margin to R^1, there bluntly angled and running almost straight to costa before three-fourths; these markings are not mentioned by Swinhoe, perhaps because in his type (which is worn) they are rather indistinct, but they are clearly present.

Weenen, 25th September, 1903 (G. Burn). Type in coll. L. B. Prout; cotype in coll. Transvaal Museum. A ♀ in coll. British Museum from White River, Eastern Transvaal, 20th November, 1910 (A. T. Cooke), is larger, rather less brown, more densely speckled, especially on under surface, where a dense irroration almost obliterates the lines.

The genus *Haggardia*, as used by Warren, contains rather heterogeneous elements. The present species is structurally related to *subalbata* Warr. (Novit. Zool., xii, 396)—build not extremely robust, palpus not shaggy-haired, forewing with SC^{1-2} coincident throughout. The absence of tongue and the short antenna, with very long pectinations, show that it does not belong to *Hemerophila*.

Ligdia pectinicornis, n. sp.

♂, 25 mm. Head, palpus, and antenna brown, palpus pale beneath. Antenna bipectinate to near apex with moderate branches. Thorax above brown, fuscous in front; beneath whitish. Foreleg red-brown above and on inner side, marked with fuscous; legs otherwise pale. Abdomen whitish, dorsally and at base red-brown and black, also with two or three dorsal spots and some slight irroration of the same colours.

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* *Hemerophila mailaria*, Swinh., Trans. Ent. Soc., Lond., 1904, p. 535.

Wings shaped nearly as in the other African species (*batesii* Wallgrn. = *costa* Warr.; *interrupta* Warr.); forewing with apex slightly more acute, termen slightly more oblique. Wings white, forewing with costal edge black, interrupted by pale ochreous spots. Forewing with red-brown basal and costal area, the posterior boundary of this shade starting from posterior margin near base and running very obliquely, almost regularly, to costa just before postmedian line; cell-spot black, touching, but not placed within, the costal shade; postmedian line from just beyond two-thirds costa, nearly parallel with termen, faintly excurved anteriorly, then faintly incurved; followed by an ornamental band about 2 mm. broad, brown, traversed centrally by a greyer shade and containing a series of black, distally white-margined spots; terminal area irregularly and weakly clouded and spotted with brown, leaving a narrow clear space between this and the postmedian band; termen with large black spots between the veins; fringe white, from SC^4 to R^3 brown, posteriorly somewhat spotted with brown at the vein-ends. Hindwing with very small dark basal patch and minute discal dot; postmedian band and terminal area as in forewing, the postmedian almost straight, rather wider in middle than at margins, the contained mark on radial fold larger and more conspicuous than the others, its white boundary being in its turn bounded by a dark mark, which almost encroaches on the narrow white band beyond; fringe white, between R^1 and R^3 brown. On both wings the dark markings bear some minute metallic scales. Under side similar, but with the markings duller and not quite so dark; no metallic scales.

Woodbush Village (C. J. Swierstra). Type (13th December, 1909) in coll. L. B. Prout; cotypes in coll. L. B. Prout and Transvaal Museum.

Distinguishable at once by the pectinate ♂ antenna.

EXPLANATION OF PLATE.

Fig. 1.—*Apleroneura nigrapex* Prout, nov. sp., ♀.
2.—*Obolcola deocellata* Prout. nov. sp., ♂.
3.—*Eupithecia hypophasma* Prout, nov. sp., ♂.
4.—*Ptychopoda umbricosta* Prout, ab. *punctigera*, Prout, nov. ab., ♂.
5.—*Pylarge subobliquata* Prout, nov. sp., ♀.
6.—*Tephrina supergressa* Prout, nov. sp., ♀.
7.—*Gyalomia aquaemontana* Prout, nov. sp., ♂.
8.—*Eupithecia brachyptera* Prout, nov. sp., ♀.
9.—*Ptychopoda consericeata* Prout, nov. sp., ♀.
10.—*Anacosymbia perstrigulata* Prout, nov. sp., ♂.
11.—*Haggardia mailaria caeca* Prout, nov. subsp., ♂.
12.—*Apleroneura devia* Prout, nov. sp., ♂.
13.—*Chrysocraspeda leighata* Warr., ab. *dehonorata* Prout, nov. ab., ♀.
14.—*Onychia deversa* Prout, nov. sp., ♂.
15.—*Apleroneura epione* Prout, nov. sp., ♂.
16.—*Macaria vau* Prout, nov. sp., ♀.

17.—*Ptychopoda sinuilinea* Prout, nov. sp., ♀.
18.—*Acidalia duplicipuncta* Prout, nov. sp., ♀.
19.—*Aspilatopsis gloriola* Prout, nov. sp., ♀.
20.—*Onychia epipercna* Prout, nov. sp., ♀.
21.—*Horisme obscurata* Prout, nov. sp., ♀.
22.—*Heterocrita deprensa* Prout, nov. sp., ♀.
23.—*Gyalomia elatina* Prout, nov. sp., ♂.
24.—*Obolcola flavescens* Prout, nov. sp., ♂.
25.—*Macaria conventa* Prout, nov. sp., ♀.
26.—*Eupithecia rubiginifera* Prout, nov. sp., ♀.
27.—*Apleroneura chromatina* Prout, nov. sp., ♀.
28.—*Stegania inaccurata* Prout, nov. sp., ♀.
29.—*Onychia horismodes* Prout, nov. sp., ♂.
30.—*Alcis divisaria* Walk. ab. *crassilineata* Prout, nov. ab., ♂.
31.—*Lithostege sesquifascia* Prout, nov. sp., ♂.
32.—*Ptychopoda pericalles* Prout, nov. sp., ♀.
33.—*Eupithecia atemaria* Warr., ♂ (var. ?).
34.—*Lycauges phytelis* Prout, nov. sp., ♀.
35.—*Onychia cryptocycla* Prout, nov. sp., ♀.
36.—*Horisme filia* Prout, nov. sp., ♀.
37.—*Ptychopoda umbricosta* Prout, nov. sp., ♀.
38.—*Allochrostes biornata* Prout, nov. sp., ♂.
39.—*Boarmia ectropodes* Prout, nov. sp., ♂.
40.—*Alcis sexorbata* Prout, nov. sp., ♂.

A NEW SPECIES OF STAPELIA FROM THE TRANSVAAL.

By Mrs. R. Pott-Leendertz, Botanist to the Transvaal Museum.

(*Plate* XIII.)

Stapelia gettleffii, Pott. Stems erect, decumbent at the base, 4-angled, 8–10 in. high, 6–8 lin. square, with concave sides and toothed angles, velvety pubescent, green; teeth tipped with a rudimentary, incurved leaf 5–6 lin. long; flowers 1–3 together near the base of the young stems, successively developed; pedicels 3 in. long, 2½ lin. thick, velvety pubescent, pendulous; sepals 6 lin. long, lanceolate, acute, velvety puberulous; corolla 6–6½ in. diameter with the lobes extended, the back greenish-yellow, minutely puberulous, the inner surface transversely rugose, purple, yellowish tinted at the centre, marked with transverse yellowish lines from the base to the tip of the lobes, leaving the margin and extreme tip intact; the flat disk 1 in. diameter; lobes 2¾ in. long, 1 in. broad in the middle, lanceolate, acute, flat, slightly recurved; disk and very base of the lobes densely covered with long, fine, downy, intermingled, light-purple hairs, the remaining part of the lobes puberulous, the margins ciliate with rather coarser whitish and light purple hairs of about 6 lin. long; outer corona-lobes dark purple-brown, ascending spreading with recurved tips, 3 lin. long, deeply channelled down the face, tapering into a subulate point; inner corona-lobes dark purple-brown, recurved spreading, 6 lin. long with the dorsal wing 3 lin. long, adnate for the whole of its length to the inner horn and truncate and toothed at the top; inner horn triquetrous, subulate, recurved, not hooked at the apex.

Louis Trichardt, Zoutpansberg, G. F. Gettleffi; 9643 in Transvaal Museum Herbarium.

This fine species of Stapelia was discovered by G. F. Gettleffi, Esq., at Louis Trichardt, and flowered at Pretoria in March, 1912. The description and photo are taken from the living material. The new species is allied to *Stapelia hirsuta* L., and should be placed next to it in accordance with the arrangement of the species in the Flora Capensis.

A New Record of Plant Species for the Transvaal Flora.

"*Duvalia polita*, N. E. Br."

D. polita, N. E. Br., family Asclepiadaceae, is given in the Flora Capensis without locality or name of collector. Mr. Brown writes:—"Described from a living plant. This now appears to be lost to cultivation."

The plant was collected by me at Zeerust in January, 1912, and living specimens brought to Pretoria and sent to Kew. It flowered at Pretoria in April, 1912.

R. Pott.

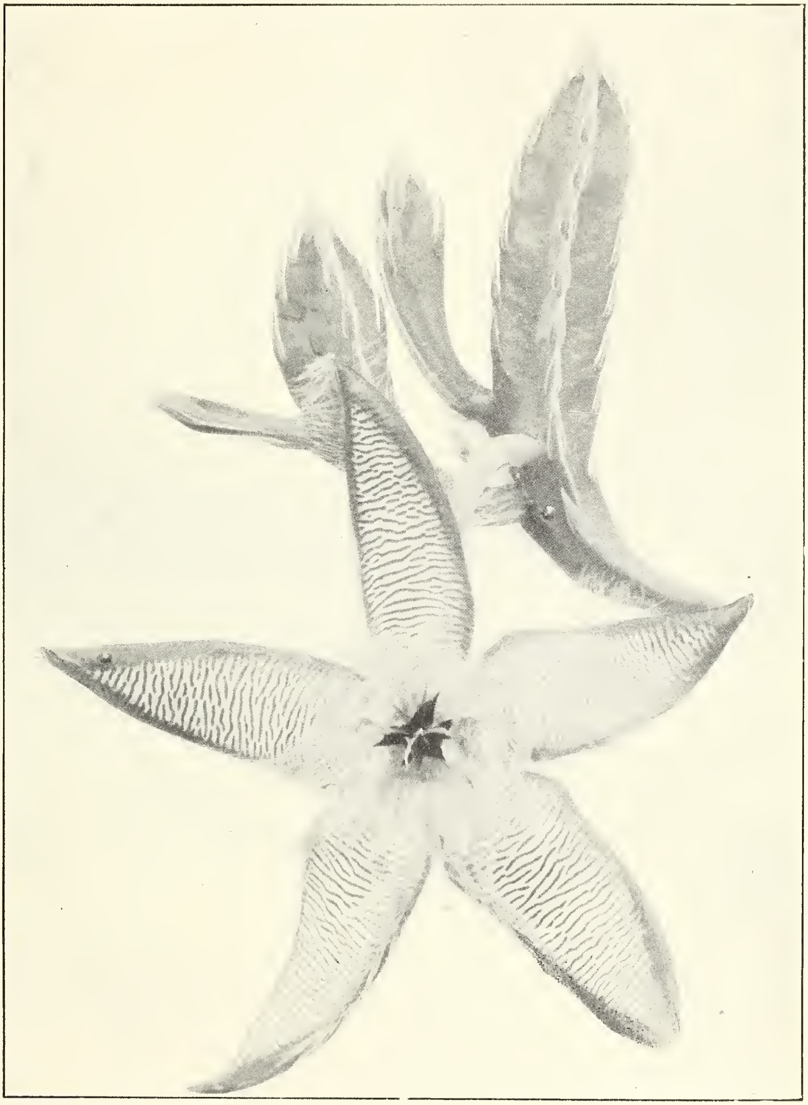

Plate XIII.

THE GRASS WARBLERS OF SOUTH AFRICA.

(*Cisticola* and *Hemipteryx*.)

By Austin Roberts.

The diagnostic characters of *Cisticola* so clearly mark it off from other African genera of the *Sylviidae* that it is hardly necessary for me to dwell on them here; but the characters distinguishing *Hemipteryx* from *Cisticola* are not so well known, and it is the aim of this discussion to define clearly the differences between these two genera; in doing so I have found it convenient to deal with all the species at present known to occur in South Africa, to show why the two genera should be regarded as distinct. *Cisticola*, as being the best known and comprising the greatest number of species, will be treated first.

Cisticola, Kaup.*

Before dealing with the species individually, it is necessary for me to make a few general remarks on the relationship of the genus to others in the *Sylviidae*, in order to advance a few simple reasons in favour of keeping this genus intact. In this connection, two questions of evolution require consideration, namely "divergence" and "convergence." By the former is meant, in the present instance, that while a number of genera may now display a certain amount of divergence of habits from those which were once common to them all, they still retain somewhat similar habits in general; and, in proportion to their divergence from their once common habits, show a common relationship in their appearance structurally. By "convergence" is meant that, though some genera now show a great similarity of habits and appearance with those of other genera, we are still able by investigation to trace back, to a limited extent, their origin, which we find is different from that of the other genera. The internal anatomy of members of this family shows so little difference of any account *inter se* that little notice of it has been taken in classification; the external structure only, such as the shape of the feathers, limbs, and body, need therefore be considered in this discussion. The term "habits" may be here defined as the nature of a bird's environment, its manner of flight, and many little points which strike the naturalist as peculiar to certain birds in a wild state. Nest-building habits and egg-characters are useful guides, not only because they can be studied in collections, but also because they may be closely compared with the birds themselves in many cases; and we had better consider them apart from the more generalized term "habits." Some notable examples of divergence and convergence are to be found in the *Sylviidae*, and by applying the principles as here defined we may be able to place a number of genera together in groups having great similarity as regards habits, nests, eggs, and external structure. The case of *Prinia* may be cited as an example of convergence, for in its general appearance and habits it much resembles *Cisticola*; but it has only ten tail feathers (as against twelve in *Cisticola*), and its nest and eggs are markedly different. Another instance is to be found in *Sphenoeacus* which, while closely resembling *Cisticola* in appearance and habits, and in having twelve tail feathers (not ten as noted by some writers), shows us, however, by its nest and eggs, and by some points in its structure, it belongs to a group comprising amongst other genera, *Bradypterus*, *Calamocichla*, and *Acrocephalus*. *Melocichla* so closely resembles *Cisticola erythrops* that when *M. mentalis* was first described, it was placed in the genus *Cisticola*; *Melocichla pyrrhops*, on the other hand, is now placed in the synonymy of *Cisticola erythrops*; and yet from what I know of the habits of *Melocichla*, I feel sure that its nest and eggs (which have not so far been described) will prove to be most like those of *Sphenoeacus*. Examples of the principle of divergence may be found in the genera *Apalis* and *Camaroptera*, which while quite different in colour from *Cisticola*, yet show by their structural characters, nests, and eggs that they are closely related to that genus.

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* Naturl. Syst., 1829, p. 119.

Throughout the genus *Cisticola*, as at present understood (excluding *Hemipteryx*, which has been placed in the synonymy of this genus by some authorities), the species show a great similarity to one another in regard to general appearance, habits, nests, and eggs, and there seems to be no doubt that they have all originated from a common stock different from *Prinia* and *Sphenoeacus*. There are almost as many minor differences in structure as there are species in the genus. We find a number of species all enjoying much the same conditions of environment, and they all retain the same plain-coloured plumage; where, however, slight differences in the conditions have affected the individual species, slight modifications of structure in consequence of these conditions have become necessary to the existence of the species. On the other hand, where a species has adopted a new set of conditions, such as inhabiting dense forests in place of less sheltered situations, where a plain-coloured plumage would not be so necessary to the existence of the species, and there would be scope for the development of new colours, there we may expect to find distinct new characters clearly marking it off from its supposed former congeners; and with the aid of this hypothesis we may be able to account for such genera as *Apalis* and *Camaroptera*.

It is evident from what has just been said that all the species of *Cisticola* still retain a number of characters in common, and they are easily recognized as belonging to one genus. Under the circumstances it seems best to leave the genus as it stands, and note in doing so that minor differences of structure should be as much considered as those of colour in the definition of species.

Having come to this conclusion in regard to the *Cisticolidae*, I have thought it advisable when dealing with the South African species to treat them under a number of groups, so that the individual variations may be more clearly shown. In this connection, an innovation has been introduced for the sake of lucidity in the use of a common ratio (expressed by the sign %) in all cases where comparisons of the lengths of feathers are made. Reference is also made to the liability of members of a group to change in shade of colour of markings according to season, as it does not seem to be generally known that some species change to a great extent while others hardly do so at all.

To show the uniformity existing amongst individuals of the same age and sex, collected at the same season, measurements of all the specimens examined are tabulated. The actual length of the first primary is tabulated in the case of *C. terrestris* and *C. lavendulae* on account of the likelihood of their being confused with some species of *Hemipteryx*.

Measurements given in the tables have been taken in the following manner:—

Wing.—From the bend of the wing to the tip of the longest primary, the quills being pressed down on the callipers and straightened out as much as possible without injury to the specimen.

Tail.—From the base of the middle tail feathers to the tips.

Tarsus.—Posteriorly, from the top of the bone to the base of the hind toe.

Culmen.—From the end of the ridge (hidden amongst the feathers) to the tip, in a straight line.

First primary.—From the base to the tip, without straightening the feather; the *second primary* is measured from the same spot on the base of the first primary to the tip of the second, without straightening the feather.

Middle toe.—Dorsally, with the toe straightened as much as possible, from a point opposite the web joining the middle to the *outer* toe, to the base of the claw.

Key to the South African Species of *Cisticolinae*.

1.	Tail without distinct dark subterminal mark	2.
	Tail with distinct dark subterminal mark	3.
2.	Tail shorter than wing, breast blue-grey	*C. fulvicapilla*, p. 231.
	Tail shorter than wing, breast whitish	*C. ruficapilla*, p. 232.
	Tail longer than wing	*C. aberrans*, p. 236.
3.	Tail over 50 mm. in length	4.
	Tail under 50 mm. in length	12.
4.	Back streaked	5.
	Back plain, greyish	*C. semitorques*, p. 251.
	Back plain, olive brown or rufous (in young obscurely streaked)	*C. erythrops*, p. 254.
5.	Tarsus over 23 mm.	*C. natalensis*, p. 252.
	Tarsus under 24 mm.	6.

6. Breast freckled.............................. *C. subruficapilla*, p. 239.
Breast not freckled.............................. 7.

7. Broad black streak down centre of middle tail feathers, or tarsus under 21 mm........... *C. tinniens*, p. 247.
No broad black streak down middle tail feathers, or tarsus over 20 mm..................... 8.

8. Back very broadly streaked with black......... *C. lugubris*, p. 249.
Back not broadly streaked with black.......... 9.

9. Tail feathers bright reddish..................... *C. rufilata*, p. 246.
Tail feathers not bright reddish................ 10.

10. Subterminal mark on outer tail feathers extending across both webs........................ *C. chiniana*, p. 243.
Subterminal mark on outer tail feathers not extending across both webs................ 11.

11. Head streaked.............................. *C. lais*, p. 240.
Head not streaked.............................. *C. monticola*, p. 242.

12. No white tips to tail feathers.................. *C. pusilla*, p. 256.
White tips to tail feathers...................... 13.

13. Rufous subterminal mark on inner web of outer tail feathers, seen from above.............. *C. terrestris* ,p. 256.
No rufous subterminal mark on tail feathers.... 14.

14. Tail longer and narrower, legs and feet weak, plumage always pale coloured.............. *C.lavendulae*, p. 259.
Tail shorter and broader, legs and feet stouter, plumage usually darker.................... 15.

15. Breast marked with oblong spots............... *H. textrix*, p. 261.
Breast not marked with oblong spots........... 16.

16. Wing under 53 mm. in adult males............ *H. minuta*, p. 265.
Wing over 52 mm. in adult males.............. 17.

17. Top of head chestnut.......................... *H. major*, p. 262.
Top of head yellowish straw colour............. *H. egregia*, p. 263.

Also *Hemipteryx immaculata* (p. 265) and *H ayresi* (p. 26), specimens of which have not been available for comparison.

Total length 104 mm., wing 47 mm........... *H. immaculata. p.*565
Total length 95 mm., wing 45 mm........... *H. ayresi. p.* 264.

Young birds of the species found frequenting the open veld may be recognized on the following points :—

Back dark brown, first primary 50–53 % length of second, tail 80–90 % length of wing....... *C. terrestris.*
Back always pale, first primary 40–45 % length of second, tail 80–85 % length of wing....... *C. lavendulae.*
Back dark or pale, first primary 30–43 % length of second, tail 60–65 % length of wing....... *Hemipteryx.*

The differences between the various species of *Hemipteryx* when young have not been worked out, and cannot now be defined ; they can only be proved by very careful work in the field.

GROUP I—*Cisticola fulvicapilla.*

(1) Tail 80–90 % length of wing ; (2) first primary about 50 % length of second ; (3) tail of medium breadth, rather flexible ; (4) beak medium thickness, equal in length to middle toe and half the claw ; (5) inner and outer toes about equal in length, the tips of their claws not reaching to the base of the middle claw ; (6) middle claw weak, but fairly sharp, about half the length of the toe without claw ; (7) no apparent seasonal change.

Inhabits scrub, searching for its food amongst grass, and taking refuge in the nearest trees when alarmed ; call-note easily recognized, and song usually uttered by the bird when perched on some conspicuous post.

1. *Cisticola fulvicapilla* (Vieill.).*

Plate—Levaill. Ois. d'Afr., III, p. 98, Pl. 124. (Also Ibis, 1863, Pl. VIII, fig. 1—*Camaroptera natalensis.*)

The following description is taken from a specimen from Knysna :—Top of head ruddy chestnut, merging into greyish olive-brown on the back ; upper tail-coverts paler than the back ; tail clearer pale brown than the coverts, sometimes with an obscure dark subterminal mark. Wings on their upper surface hardly differing in colour from the back when closed, but darker on the hidden portion of the quills. Lores and cheeks buff ; ear-coverts grey, dashed with pale rufous. Under surface of body dull blue-grey, the throat and under tail-coverts paler, and the middle of abdomen white ; axillaries greyish white, slightly tinged with fulvous ; thighs tawny rufous. Specimens from Pondoland are labelled as follows :—Iris hazel ; maxilla brown, mandible pinkish flesh-colour ; legs and feet light flesh colour. Length of males 113–118 mm., of female 103 mm.

The female seems to be somewhat paler on the under surface of body and is smaller than the male. In young specimens the colours are not so well-defined, and the whole of the upper surface is washed with pale fulvous.

This is a well-marked species easily distinguished from all its congeners by its bluish-grey breast and flanks. Its range appears to extend from the Cape Peninsula to Natal, its distribution being restricted to the moist region along the coast, though it is sometimes found farther inland. I am not personally acquainted with this bird. Mr. Ayres has written that "these birds are plentiful (in Natal), frequenting reeds and grass ; their

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* Nouv. Dict., XI, 1817, p. 217.

flight is tolerably strong; their food consists of minute insects, eggs of moths, etc. During the summer months they may frequently be seen perched on the top of a low tree or bush, when they utter a monotonous weeping note for a length of time." The Brothers Woodward, writing of this species, state that its call is heard principally during the early summer months, that it frequents long grass and weeds, and that the nest is a loose domed structure of coarse grass and cobweb, lined with vegetable down and fixed in the stalks of a tall weed; they describe the eggs as two in number, light blue and speckled with red-brown. In the Transvaal Museum collection there are several clutches of eggs of this species collected by R. H. Ivy at Grahamstown; all these eggs are white, with clear pink and red-brown spots or speckles varying in quantity; they measure 14·9–15·5 × 11·7–12·1 mm. In the same collection there is also a nest, taken with the female parent by H. H. Swinny, Port St. Johns District, on 12th December, 1907; this nest is composed of dry blades of grass on the outside, and the rest of silky fibres of weed-flowers, loosely matted together into an oval shape, with the entrance at one side near the top; the eggs are four in number, like those from Grahamstown in colour, and measure 14·5–15 × 11·5–11·7 mm.

Table of measurements of specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
832	Knysna	9/11/98	♂	51	41	17·5	11
831	,,	10/2/99	♂ (juv.)	49	43	17·5	11
1970	Grahamstown	?	? (♂ ?)	52	46	18·5	?
4249	,,	-/1/06	♂ (juv.)	46	40	17·5	?
4250	,,	?	♀	51	43	17	11
2401	Pondoland	11/5/07	♂	49	45	18	10
4252	,,	16/11/07	♂	49	40	18	10·5
4253	,,	26/6/08	♂	50·5	46	17·5	11
4258	,,	24/4/08	♂	49	44	17·5	11
3269	,,	10/5/07	♀ (♂)	51·5	45	17·5	11
3270	,,	10/5/07	♂	50·5	44	18	11
9038	,,	25/5/11	♂	50	45	17·5	11
9038	,,	13/6/11	? (♂)	51	46	16·5	11
9523	,,	13/6/11	♂	50·5	46	18	11
4254	,,	12/3/08	♂ (juv.)	48	44	17	10
9200	,,	12/12/07	♀ (and eggs)	45·5	40	17	11
8963	Matatiele	20/8/11	♂	54	48	19	12
8964	,,	18/8/11	♂	53	49	18	12
8965	,,	16/7/11	♀	49·3	46	17·5	11

NOTE.—The specimens from Pondoland may prove to represent a small race, and if so Hartlaub's name of *Camaroptera natalensis* may have to be revived.

2. *Cisticola ruficapilla* (A. Smith).*

Plates—Smith's Ill. Zool. of S. Afr., Pl. 73, fig. 1; Ann. Transv. Mus., Jan., 1909.

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* Zool. of S. Africa, Plate 73 (1842).

The following is copied from Smith's original description :—

" Top of head and upper parts of the neck pale chestnut brown, the latter lightest ; interscapulars, back and tail-coverts pale broccoli-brown washed with yellowish brown ; tail the same colour, but brighter and the feathers margined with light yellowish brown of a dull hue. Lesser quill-coverts light brownish red, broadly margined and tipped with pale broccoli-brown. Primary and secondary quill-coverts, and primary and secondary quill feathers pale brownish red, margined more or less broadly with pale yellowish brown, and a few of the secondaries and tertiary feathers edged with pale chestnut brown. Chin, throat, centre of breast and belly, pale straw yellow ; side of head, neck, breast, belly and vent pale greyish brown ; legs and toes pale buff-orange ; claws a pale horn colour ; eyes bright reddish orange. Length 111 mm. ; wing, 53·7 ; tail, 47 ; tarsus, 21."

The history of this species is somewhat involved, and requires to be treated at some length. In the year 1850, Bonaparte, on finding that the same name had been applied by Fraser to another species of the genus found in West Africa, gave the South African species the new name of *Smithi*, in honour of its discoverer ; and for forty years it was known by that name. In 1891, Reichenow, after having noted that Fraser's description was antedated by a year by Smith's, gave the West African species the new name of *rufopileata*. Prior to this, however, Dr. Sharpe placed the species as the female of *aberrans* in his edition of Layard's " Birds of South Africa." Messrs. Gurney and Ayres in writing on the subject in the Ibis of 1880 (p. 101) and 1884 (p. 226), pointed out that *aberrans* and *Smithi* were distinct species. In this connection, I may mention that Mr. Gurney's notes are somewhat spoilt by the fact that at least one of the specimens he gave measurements of did not belong to the former species, but to another which I am calling *C. monticola* ; but this point does not much affect the question at issue as the two species, *aberrans* and *monticola*, are both very much larger than *ruficapilla*.

In compiling the " Catalogue of Birds in the British Museum," Sharpe then altered his opinion as to this species being the female of *aberrans*, and placed it as the winter plumage form of *Dryodromas* (i.e. *Cisticola*) *fulvicapilla* ; this was also done in the appendix to his edition of the " Birds of South Africa." In the year 1908, Haagner referred some specimens of this species to Dr. Reichenow, and on the latter's endorsement gave them the name of *C. cinnamomeiceps* ; in doing so, Haagner indicated that the type came from Beira and the cotype from Matabeleland, and mentioned that a number of specimens were from the Transvaal. The question becomes still more involved, for I cannot help thinking that the specimens from Beira are referable to Alexander's *C. mulleri* from the Zambesi. *C. mulleri* is described as closely resembling *C. dodsoni*, Sharpe, of Somaliland, but differing in not having white tips to the tail feathers, and the subterminal marks on these feathers narrow and only perceptible under certain lights ; the type is a female, which is said to measure, wing 46 mm., tail 41 mm. As may be noted by reference to the table of measurements, males appear to have the wing about 3 mm. longer than that of the females, and as the three specimens from Beira are males (at least, two are sexed as such and the third is not sexed at all), and give measurements of 49 mm. in the wing, it is reasonable to conclude that the male of *C. mulleri* would be about the same size as the specimens from Beira; also, so far as one can make out from the description, the colours are the same. Should these specimens from Beira prove to be identical with *mulleri*, then that name might be retained as a trinomial to *C. ruficapilla*, on account of the slight difference in size and shade of colour between specimens from the Zambesi region and the Transvaal.

Smith's description of the habits and habitat of *ruficapilla* also support my conclusion that the Transvaal specimens are identical with that species. He says: "This bird occurs in various situations in the interior of Cape Colony, and is usually found among brushwood and upon dwarf trees. It feeds upon small insects, and in quest of these it is to be seen flitting from branch to branch with great rapidity. As compared with other species, it may be considered a rare bird, and it rarely happens that more than one or two specimens are found in any given locality which it is known to inhabit." The Transvaal Museum collection contains specimens from Honingspruit Station in the Orange Free State and Potchefstroom, and I have seen it in the extreme south-western Transvaal, so that there is no reason why it should not also be found to occur even farther south "in the interior of Cape Colony." The habits of the species found in the Transvaal are also as described by Smith, and although it is not at all uncommon in the "bushveld," it is so small and quiet that its presence is not often detected unless it is sought for, which fact might account for Smith's note in that respect. Gurney, when dealing with this species, mentioned a specimen from Ovampoland and another from Pinetown, Natal, so that it would indeed be strange if Smith had not collected specimens in his explorations, and there is no other bird mentioned in his works which might be identified with these from the Transvaal. Smith also referred to his *ruficapilla* as possibly identical with *D. fulvicapilla*, Vieill. (*vide* his Ill. Zool. of S.A.); but as we are now able definitely to separate the two species, I do not think that there can be any doubt as to the identity of the specimens in the Transvaal Museum labelled as *C. cinnamomeiceps*.

This species is fairly common in the thorn-scrub in the vicinity of Pretoria, and is often to be seen in the suburbs. When disturbed from the grass in which it has been searching for insects, it invariably flies into the branches of the nearest bush or tree and quietly watches the actions of the intruder. During the heat of the day, in the breeding season, the male takes up a post on the top of some small tree to utter his song; this consists of a number of prolonged little chirruping notes, with slight variations. He also keeps watch when his mate is sitting, and in the event of a likely intruder passing near the nest, he flits down to warn her; she then slips unobtrusively out of the nest and conceals herself in a neighbouring bush. After the young have hatched, both parents evince some alarm when an intruder approaches the nest, and their concern becomes still more conspicuous as the young grow bigger; when the young have left the nest, it is always easy to detect their presence, the parents then becoming extremely agitated in their alarm, dancing about the bushes, flitting from branch to branch and uttering series of clicking notes, which sound something like " tirr ticki-ticki-ticki-ticki." The nest is placed in the thickest part of a bunch of grass, close to or on the ground, more often than not under the shelter of some dwarf " wait-a-bit " thorn bush ; it is oval in shape, like those of all the *Cisticolidae*, composed outside of dry blades of grass curled round and mixed with the soft, white silky fibres of weeds with which the interior is warmly lined. The eggs vary in colour, like those of other members of the genus, being sometimes plain white, pink, or of various shades of greenish blue, but more often speckled in varying quantity with a number of other colours ; specimens in the Transvaal Museum collection measure 15·2–16 × 11·6–12·3 mm.

Specimens in the Transvaal Museum collection :—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
5284	Honingspruit Stn.	8/7/08	♀	49	45	17	10
5288	,, ,,	18/2/09	♀	50	40	17	10
948	Irene, Pretoria....	29/10/02	♂	53	45	18	10
5285	Pretoria..........	30/1/09	? (♀)	50	39	18	10
5286	,, ...	30/1/09	? (♂)	53	43	17·5	10
5287	,, ...	13/2/09	♂	52	44	17	9
6798	,, ...	22/7/09	♀	49	41	17	10
6799	,, ...	22/7/09	♀ (juv.)	47	41	18	10
6808	,, ...	?	? (♀)	47	37	17	10
8956	,, ...	29/4/11	? (♂)	53·5	46	18·5	10
8957	,, ...	29/4/11	♂	52	45	17	10
8958	,, ...	29/4/11	♂	51	45	18	10
8960	,, ...	5/6/11	♂ (juv.)	51	45	18	10
8961	,, ...	16/3/11	♀	51	42·5	18	10
8962	,, ...	5/6/11	♀	47	40	17	10·5
8968	,, ...	5/6/11	♀	49	44	17·5	10·5
8969	,, ...	5/6/11	♂	53·5	47	18·5	10·5
6806	,, ...	13/4/10	♂ (♀)	50	45	17	10
9527	,, ...	10/1/12	♀ ? (♂)	52·5	41 ?	18	11
6807	Warmbaths, T'vaal	26/7/09	? (juv.)	47	45	17	10
8959	,, ,,	17/12/09	♂	52	45	17·5	10·5
6805	Goud River, T'vaal	22/7/10	♂	52	44	18	10
6800	Nylstroom, T'vaal	22/7/09	♂	52	44	17	10
6810	Lydenburg District	4/4/10	♀	47	40	17	10
6814	Hector Spruit.....	25/5/10	♂	51	47	18	10
6812	Koedoes River, Tvl.	24/9/10	♀ (♂)	53·5	46	18	10
6813	,, ,,	24/9/10	♀	46	39	17	10
6809	Woodbush, T'vaal	12/12/09	♀	45	35 ?	17	?
2395	Matabeleland......	16/9/05	♂	52	43	18	10
4450	Zimbiti, Beira.....	12/1/08	? (♂)	49	36	18	10
6815	,, ...	14/9/10	♂	49	41·5	18	?
6816	,, ...	24/7/10	♂	48·5	39	17·5	10·5
5289	Boror, P.E. Af....	22/7/09	? (♀)	42	37	16	16

NOTE.—The specimens from Zimbiti (*mulleri ?*) are somewhat paler on the under surface of the body. The specimen from Boror has a very distinct subterminal smudge on the tail feathers, and it is so much smaller than any of the others that I think it may be considered as representing a race distinct from *mulleri*; two of the specimens from Zimbiti (Nos. 6815 and 6816) also show a faint subterminal mark on the tail feathers, but it is not nearly so distinct as in the Boror specimen. The specimen from Woodbush is smaller than any of the others from the Transvaal, and from the situation of that place as compared with the bushveld, where the others were collected, I think that another race possibly also exists there, which lacks the subterminal mark on the tail feathers. The plumage when rubbed and worn by constant contact with the grass is lighter coloured than when in a fresh condition. In young birds the colours are not so well defined as in adults.

GROUP II—*Cisticola aberrans.*

(1) Tail always longer than the wing=110–132 %; (2) first primary 65–75 % length of second; (3) tail slender and flexible; (4) beak medium strength, in length equal to the middle toe and half its claw; (5) inner and outer toes about equal in length, not reaching to the base of the middle claw; (6) middle claw weak, less than half the length of the toe. No noticeable seasonal change in colour, but tail slightly longer in winter. Inhabits scrub on mountain sides; call not very loud; and flight rather weak.

Cisticola aberrans (A. Smith).*

Plate—Smith's Ill. Zool. of S.A., Pl. 78.

The following is a copy of Smith's original description:—

"The upper surface of head and back of neck pale chestnut-brown, deepened with hyacinth-red; the interscapulars and feathers of the back intermediate between yellowish and broccoli-brown, each with an indistinct umber brown shade in the course of the shaft; the under parts a pale rusty olive-yellow, the throat and chin lightest; the sides of the breast and flanks tinged with hair-brown. Lesser wing-coverts dull umber-brown, edged with dull yellowish brown. The primary, secondary, and tertiary quill feathers light brownish red; the primaries and secondaries edged towards the quills with pale chestnut-brown; the tertiaries edged and tipped with dull yellowish brown. The tail feathers coloured like the back, lightest at the points; and behind the light points a faint indication on each of a dark spot or bar; the two middle ones edged externally and internally, the rest only externally, with yellowish brown. Eyebrows pale sienna-yellow, not distinctly indicated. Bill: upper mandible light orange-coloured brown shaded with deep reddish brown, lower mandible straw yellow. Legs and toes pale reddish yellow. Length 148 mm., wing 61 mm., tail 81 mm., tarsus 26 mm." The type, a ♂, was collected at Durban.

Sharpe gives a more accurate description of this specimen in his edition of Layard's "Birds of South Africa," as Smith's description leads one to believe that the back is streaked and the tail feathers have a subterminal band; while as a matter of fact these two characters are so very faint as to be hardly noticeable, as compared with other species in which these characters are more pronounced and ensure identity of the species. The figure given by Smith is more satisfactory than the text.

C. aberrans has sometimes been confused with *ruficapilla*, as has been shown in the discussion of that species, the two being identical in colour;

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* Zool. of South Africa, Plate 78 (1843).

but *aberrans* is a much larger bird of more sedentary habits, as well as having the tail always very much longer than the wing.

C. aberrans seems to be widely distributed in suitable localities, the Transvaal Museum having specimens whose range extends from Grahamstown to the Northern Transvaal. Another closely-allied species (*C. alticola*, Shell.) occurs in Nyassaland. It is fairly plentiful in the scrub at the foot of the hills round Pretoria, but is not, apparently found in the bushveld or even far from the hills ; during the winter months it sometimes strays into the city near the Museum from the adjacent Daspoort Range. The call-note of this species closely resembles that of *Prinia mystacea*, and is sometimes like that of *Camaroptera brevicaudata* ; but one is not likely to mistake *aberrans* for either of these species, since the situations in which it is found suit neither of them. During the breeding season the parents when alarmed become very anxious for the safety of their young, dancing about in an excited manner in the middle of some bush near the ground, and uttering varied plaintive notes. I have not so far heard this species utter any loud call-note, and I think it must be, on the whole, rather quieter than its congeners.

On the 10th January last, for the first time I took the eggs of this species, shooting the hen to make sure of their identity. The nest was of the typical cisticoline composition, and placed in a bunch of grass surrounded by thorn scrub ; the eggs contained in it were of a pale greenish blue, finely spotted with various shades of brown, and measured 17·3–17·7 × 12·4–12·8 mm.

Specimens from Pondoland are consistently smaller and whiter on the under surface of body than those from elsewhere, and I am therefore naming them

Cisticola aberrans minor, subsp. nov.

The type of this subspecies is No. 9208, an adult ♀ collected by H. H. Swinny, Port St. Johns District, Pondoland ; this specimen was shot at a nest which is now in the Transvaal Museum collection, together with four eggs. The nest is like that described above, and the eggs are white with fine pink spots concentrated in a halo round the obtuse end ; they measure 15·5–16·1 × 11·6–12·2 mm.

Specimens of *C. aberrans* in the Transvaal Museum.

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
6845	Red Hill, Natal...	30/9/09	♂	55	61	22	11
4244	Grahamstown.....	–/1/06	? (♂)	54	59	20	?
4243	,, ...	–/1/06	♂	55	67	21	11
4245	,, ...	–/1/06	♂	52	61	21	11
4246	,, ...	–/1/06	♀	51	62	20	11
6851	Pretoria..........	10/12/09	♂	59	68	21	12
6852	,, ...	10/12/09	juv.	52	68	20	10·5
6856	,, ...	18/12/09	♂	55	64 ?	21	12
6152	,, ...	10/12/09	♂	60	67	20	12
6854	,, ...	10/12/09	♂	58	60	22	12
6855	,, ...	18/12/09	♀	52	60	19·5	12

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
6848	,, ...	16/12/08	♂	58	68	21	?
6857	,, ...	19/7/09	♂	59	72	21	12
6858	,, ...	19/7/09	♀	53	62	20	12
8966	,, ...	29/4/11	♂	59	75	22	13
8967	,, ...	5/6/11	♀	51	58	20	12
9258	,, ...	10/1/12	♀ (and eggs)	54	61	20	12
9521	,, ...	10/1/12	♂	57	68	22	12
9522	Pretoria District...	15/1/12	♀	54	66	22	13
6849	Makapan Caves....	4/2/11	♂ (juv.)	54	61 ?	20	12
6850	,, ,, ...	4/2/11	♂	56	65 ?	20	12·5
4242	Woodbush........	22/2/08	♀ (♂)	56	63	20	12
6847	,, ...	14/12/09	♀	51	56	21	12
6841	Groot Spelonken..	31/8/09	♀	55	64	20	12
6842	,, ..	9/8/09	♂	55	70	21	13
6848	,, ..	29/8/09	♂	56	65	20	12
6840	,, ..	4/9/09	—	—	—	—	—

NOTE.—No. 6848 is the type of Haagner's *C. pretoriae*, apparently a soot-stained example of this species taken in the vicinity of the town. No. 6845 is now in the Berlin Museum.

Specimens of *C. aberrans minor* in the Transvaal Museum collection :—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
4247	Port St. Johns....	11/10/07	? (♂)	52	61	20	11
4248	,, ...	20/3/08	♂	50	59	21	12
6843	,, ...	12/5/09	♂	50	65	21	12
6844	,, ...	21/7/09	♂	51	67	21	12
9036	,, ...	18/9/11	♂	51	67	20	12·5
9208	,, ...	12/12/07	♀ (and eggs)	46	56	20·5	11·5
9526	,, ...	12/6/11	♀	45·5	56	20	12
9525	,, ...	12/6/11	♀	46	?	20·5	11

NOTE.—Soft parts as noted on some of the labels are as follows :—Iris hazel ; maxilla dark brown, mandible horn colour ; legs and feet dark flesh colour. Lengths of specimens from Pretoria are given as : ♂♂ 144–152 mm., and ♀♀ 136–140 mm. ; specimens from Pondoland measured in the flesh are given as : ♂♂ 137–145 mm., ♀♀ 124–131 mm.

GROUP III—*Cisticola subruficapilla.*

(1) Tail in summer 80–100 %, in winter increasing to 108 % length of wing ; (2) first primary 51–61 % length of second ; (3) tail medium breadth, flexible ; (4) beak medium, not quite equal to the length of the middle toe and half the claw ; (5) inner and outer toes about equal, their claws reaching just beyond the base of the middle claw ; (6) middle claw weak, not quite half as long as the toe ; (7) a distinct change in shade of colour at different seasons. Inhabits scrub and long grass in the neighbourhood of forests or on mountain sides ; note a loud clear pipe uttered by the male when perched on some conspicuous post ; at times the bird becomes rather noisy.

Cisticola subruficapilla, A. Smith.*

Plate—Smith's "Ill. Zool. of S.A." Pl. 76.

The following description is taken from Smith's text to the abovementioned plate:—"Upper parts of the head and back, and the sides of the neck near the head, light chestnut-brown, striped along the centre of each feather; the lower parts of the back and sides of the neck, the interscapulars, the lesser wing-coverts, and the back umber-brown, variegated with a colour intermediate between ashy-grey and broccoli-brown, each feather being so broadly edged and tipped with the latter colour as even to constitute it the predominant colour. Tail reddish brown, all the feathers tipped with wood-brown, the two centre ones very faintly, and all the others have each a broad transverse umber-brown bar immediately behind the light tip. The primary and secondary wing-coverts umber-brown, margined externally and tipped with pale wood-brown; the primary, secondary, and tertiary quill feathers intermediate between brownish red and umber-brown, the tertiaries darkest—the primary and secondary feathers towards the quills narrowly margined with light chestnut-brown; the tertiaries are edged and tipped with wood-brown; chin, throat, middle of breast and belly pale yellowish grey, passing in some places into white, the breast faintly freckled with pale brown; sides of breast, flanks, vent, and under tail-coverts pale hair-brown. Bill chestnut-brown, the lower mandible towards its base yellowish brown. Tarsi pale reddish brown, passing towards toes into yellowish brown; claws yellowish brown, tinted with light reddish brown. Length 135 mm., wing 51 mm., tail 57 mm., tarsus 18 mm." The type was a female.

A good description is also given by Sharpe in his edition of "Birds of South Africa," p. 267, taken from the type specimen, said in this case to be a male. In this publication the different species seem to have been better appreciated than in his subsequent revision, the results of which have led to some misunderstanding in works of other writers.

The principal specific character of this bird is its "freckled" breast, which is not found in any other South African species. Its range is apparently confined to the Namaqualand-Knysna Mountains, not extending beyond the Sunday's River, its place being taken in the Drakensbergen and contiguous ranges by another closely allied species. Smith seems to be the only writer who has recorded the habits of this species. He writes: "This bird occurs in various districts of Cape Colony, and is found either upon brushwood or among rushes or reeds. It feeds upon insects and, like others of the genus, flits generally from branch to branch or from reed to reed in quest of its food." According to Sharpe (*loc. cit.*) eggs taken by H. Jackson at Nelspoort are white, faintly tinged with green, and dotted with small red-brown and purple spots, chiefly in a ring at the obtuse end; axis 14 mm., diam. 11 mm. No doubt, eggs of this species will be found to vary in colour quite as much as those of other members of the genus.

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* Zool. of South Africa, Plate 76 (1843).

Specimens in the Transvaal Museum collection :—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
813	Knysna...........	5/9/99	♂	60	57	21	11
816	,, ...	5/9/99	♂	60	65	19·5	11
819	,, ...	?	♂	61	65	21	10·5
1055	,, ...	10/2/99	♂ (juv.)	51	47	16	9
814	,, ...	7/9/99	F	52	53	19	9
817	,, ...	7/9/99	♀	54	50 ?	20	10
1052	,, ...	7/10/98	♀	52	53	19	10
1053	,, ...	7/9/99	♀	54	53	19	10
1054	,, ...	2/8/99	♀	50·5	52	18·5	10
1056	,, ...	?	? (juv.)	51	48	19·5	10

NOTE.—The two juvenile specimens are only faintly streaked on the breast. No. 819 is less clearly streaked on the breast, and has the three middle secondaries pure white; there is besides an admixture of white on the feathers of the rump. All these specimens are distinctly freckled with dark brown from the cheeks to the ear-coverts, and as this is noted in neither Smith's nor Sharpe's description, the Knysna birds may perhaps have to be separated from those in the western districts of Cape Colony. The collection is not large enough to judge of the changes of plumage, all of the adults having been collected before the breeding season; but no doubt the summer plumage is lighter coloured.

2. *Cisticola lais*, Finsch and Hartlaub.*

Sharpe has given a full description of the type of the species in his "Birds of South Africa," p. 271, from which the following is copied :—

"Above fulvous brown, very broadly streaked with black, the margins to the feathers rather rufescent; head and hinder neck more rufous than the back, the blackish stripes much less distinct and indeed almost obsolete on the nape and hinder neck; rump uniform fulvous brown, the upper tail-coverts also with very faint mesial streaks of blackish; wing-coverts ashy-fulvous with dark brown centres, the greatest series more shaded with rufous externally; quills dark brown, broadly edged with rufous externally so as to give a rufous aspect to the wings; the margins of the secondaries paler and more fulvescent; tail rufous brown, lighter rufous on the margins; the two centre feathers without any subterminal black mark and irregularly rayed across with dusky bars under certain lights, all the other feathers with a broad black subterminal bar, the tips being fulvescent, this pale ending being more distinct on the outer plumes and forming a margin to the last rectrix; lores and feathers round the eye yellowish buff, forming a tolerably distinct eyebrow; sides of face also fulvous, the ear-coverts rather browner with obsolete dusky tips to the feathers; cheeks fulvous; chin and centre of body white, the throat and sides of the body tawny fulvous, clearer on the thighs, the flanks slightly shaded with brown; under wing-coverts and tail-coverts tawny buff; bill brown, yellowish at the base of the under mandible; legs yellowish. Length 127, wing 54, tail 59, tarsus 18·5." This specimen is said to be a ♀ in the original description, but the sex is not indicated by Sharpe; it was collected by Thos. Ayres in Natal.

The series of skins in the Transvaal Museum collection shows that in winter the under surface of the body is almost entirely tawny fulvous, the back washed with that colour and the tail longer. The colour of juvenile specimens is similar to that of the adults in winter plumage.

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* V. d. Decken's Reisen, IV, p. 237 (1870).

The distribution of this species apparently extends from Grahamstown to Wakkerstroom, including the whole extent of the Drakensberg and its spurs; and it probably ranges still further north until met by another closely allied species, which is found in the hilly country of the Central and Northern Transvaal.

C. lais is very common in the hilly country below the Drakensberg, its range extending as far down as the coast. It frequents long "tambooti" grass, weeds, and scrub on the borders of forests, and also the coarse shrubs growing amongst rocks on the tops of the hills away from the forests. During the winter months these birds while in search of insects are to be found in parties scattered about amongst the long grass, and when alarmed they sidle up the taller grass-stems to watch the actions of the intruder. During the summer months the male takes up a conspicuous post on the top of a bush or tall grass-stem, warning his mate by a loud and melancholy note, sounding something like "to-wee-yeh." Both sexes also utter a number of other notes, which are not easily expressed in writing. Eggs are laid between the middle of November and the end of January, and number three or four to the clutch; they vary in colour quite as much as those of other species; they measure 16·6–17·9 × 12·2–12·9 mm. The nests are easily distinguished from those of other species found in the same localities; they are usually placed in the centre of a tuft of green, broad-bladed grass, the tops of most of the blades being curled over and fixed with silky fibres to the nest thus concealed; the rest of the blades are left projecting upwards so as to conceal those which are curled downwards; inside the nest is composed of dry curled blades of grass, and is warmly lined with silky, usually white, fibres of weeds and grass tops.

Specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
5234	Grahamstown.....	?	? (♂)	63	56	21	12
5252	,, ...	26/10/08	♂	65	57	23	13
2879	,, ...	8/1/07	♂	60	63	22	13
4275	,, ...	–/2/92	? (juv.)	53	52	19	?
1981	,, ...	–/4/93	♂	61	62	22	13
1980	,, ...	–/5/97	♂	63	64	22	?
8987	Port St. Johns.....	15/11/10	♀	53	48	19	11
5250	Umtamvuma River	31/5/08	♂	62	67	21	12·5
5251	,, ..	21/5/08	♂	64	63	22	12
9510	Matatiele, E. G....	7/2/12	♂	65	?	21	11
9508	,, ...	7/2/12	♂ (juv.)	59	56	?	11·5
9509	,, ...	7/2/12	♂ (juv.)	60	56	20	11·5
9511	,, ...	7/2/12	♀	53	48	17·5	11
9512	,, ...	7/2/12	? (juv.)	53	49	18	11
8980	Dargle District....	9/9/09	♀	55	52	19·5	11
8982	,, ...	9/9/09	♂ (♀)	53	51	18	11
8983	,, ...	30/8/09	♀	56	54	19	11
8981	,, ...	1/9/09	♂	64	65	21·5	13
8984	,, ...	6/9/09	♂	64	66	22	13

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
8965	Wakkerstroom....	16/10/09	♂	66	51	20	12
9180	,, ...	26/12/11	♂	67	56 ?	19	12·5
9506	,, ...	18/1/12	♂	64	?	21	12
9507	,, ...	18/1/12	♀	55	?	18	11
8986	,, ...	5/10/09	♀	54	50	19	11

I have also taken the following measurements of skins kindly lent me for the purpose by Rev. R. Godfrey, of Pirie, Kingwilliamstown :—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
—	Pirie.............	29/6/10	♂	62	68	22	12
—	,, ...	28/9/10	♂	62	58	20	12
—	,, ...	29/6/10	♀	52	54	19	11
—	,, ...	19/12/10	♀	52	48 ?	19	11
—	,, ...	14/12/09	♀	52	44 ?	18	11
—	,, ...	19/12/10	♀	56	51	19	11
—	,, ...	23/12/10	♀	51	47 ?	18	11

NOTE.—Some specimens are more lightly coloured on the crown than others ; this fact is due apparently to friction.

3. *Cisticola monticola*, spec. nov.

This species closely resembles *C. lais*, but may be readily distinguished by its uniform and brighter coloured crown, less conspicuously streaked back, and by the fact that the subterminal marks on the tail feathers are not so clearly defined. The following description is taken from an adult male in winter plumage, collected at Six-mile Spruit, Pretoria, on 17th August, 1909 :—

Forehead, crown and nape uniform chestnut red, merging on the neck into the paler coloured back ; scapulars and feathers of the back grey, with dark centres, producing a streaked appearance, and more or less suffused with rufous ; rump and upper tail-coverts coloured like the back but not streaked ; middle tail feathers uniform rufous brown, the remaining feathers slightly darker and with a dark brown subterminal smudge confined to the inner web. Lesser and median coverts like the back ; greater coverts brown in the centre with rufous outer margins and paler tips and inner margins ; primaries and secondaries brown, the outer margins of all but the two outermost of the former bright rufous, this colour extending obliquely over all the quills and becoming paler on the innermost secondaries, the faded rufous margins then extending round the tips and inner margins ; primary-coverts like the primaries. Bristles on the sides of the face tipped with black, giving a freckled appearance to the cheeks ; lores, eyebrows, and the whole of the under surface fulvous, the flanks slightly darker and the throat and middle of abdomen paler. Edge of wing yellowish white. Iris red-brown ; maxilla brown, mandible and legs flesh colour. Length in the flesh, 147 mm.

Although the Transvaal Museum collection contains about a dozen skins of this species, most of them possess a worn and soot-stained plumage, and are useless for detailed examination ; but the outstanding characters are still clearly perceptible. In summer the plumage is much whiter below, greyer above, and the crown lighter rufous, and therefore in greater contrast to the back. Specimens of this species from the Northern Transvaal are somewhat more thickly streaked on the back, and in two out of three examined, there are faint indications of streaks on the nape.

This species seems also to occur at Potchefstroom, wherefrom reference to specimens in the British Museum have been made in the Cat. B.M., Vol. 7, p. 289, under the name of *C. lais.* Also, I came across this species in the hills on the banks of the Vaal River at Venterskroon, and in the rocky kopjes west of Potchefstroom; unfortunately, I have no skins before me for examination.

In its habits it is quite distinct from *C. chiniana* (which it closely resembles in colour), being found only on bare kopjes amongst the sparse rank vegetation. Its call-note and habits are almost identical with those of *lais*, from which it is to be at once distinguished specifically by its distinct colour pattern. Its eggs are also similar to those of *lais.*

Specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
8972	Pretoria (Type)...	17/8/09	♂	64	69	19·5	12·5
8974	Pretoria..........	–/4/11	♀	56	56 ?	17·5	11
5236	,, ...	16/12/08	♂	62	55	19	12
9514	,, ...	20/1/12	? (♂)	63 ?	58 ?	19·5	12
8973	,, ...	22/7/09	♀	57	61	17·5	12
9514	,, ...	10/1/12	♂	60 ?	58 ?	19	11·5
8975	Germiston........	23/2/10	♂	60	60	20	12
8979	,, ...	19/2/10	♂	62 ?	57	20	12·5
8978	,, ...	15/2/10	♀	56 ?	51	18	11·5
8977	,, ...	17/2/10	juv.	55	63	17·5	11·5
8976	,, ...	17/2/10	juv.	55	55	18	11
4272	Woodbush........	19/12/07	♂	60	49 ?	20	11·5
8970	Haenertsburg.....	7/12/09	♀	59	56 ?	21	12
8971	,, ...	7/12/09	?	59	59	20	12

GROUP IV—*Cisticola chiniana.*

(1) Tail about same length as wing, not becoming perceptibly longer in winter and not varying, in good plumage, more than about 10 %; (2) first primary 57–66 % length of second; (3) tail not very broad, rather soft; (4) beak fairly stout, equal in length to the middle toe and half or more than half the claw; (5) inner and outer toes about equal, their claws reaching beyond the base of middle claw; (6) middle claw short and blunt, less than half the length of the toe; (7) seasonal change only slightly perceptible. Inhabits dry thorn-veld; is very shy; voice is harsh and noisy.

1. *Cisticola chiniana* (A. Smith).*

Plate—Smith's Ill. Zool. of S.A., Pl. 79.

The following description is taken from Smith's text to the plate above mentioned:—

"The upper surface of the head, and the upper parts of the sides of the neck, intermediate between yellowish brown and hyacinth-red (a bright cinnamon-brown), the feathers narrowly edged and tipped with light yellowish brown. The interscapulars, the lesser wing-coverts, and the feathers of the back, brownish red, each edged and tipped with wood-brown. Rump and upper tail-coverts pale broccoli-brown, the feathers narrowly edged and tipped with light wood-brown. The primary and secondary quill-coverts umber-brown, the former narrowly edged, externally and the latter broadly edged and tipped with wood-brown. The primary and secondary quill feathers brownish red, the outer vanes of primaries, towards quills, broadly edged with yellowish brown, towards the tips narrowly with wood-brown, the tips the same colour; secondary quill feathers edged externally with a brighter tint of yellowish brown, and towards and at tips wood-brown; tertiary quill feathers umber-brown, edged and tipped with yellowish brown, passing, close to the margins, into wood-brown; the inner vanes of all the quill feathers towards base sienna yellow. Tail: the two middle feathers yellowish brown, lightest at the edges, the outer feathers light brownish red, brightened towards edges with yellowish brown, the tips dull wood-brown, and behind them a broad bar of umber brown. Chin and centre of belly white; throat and centre of breast ochrey-white; the sides of the neck and breast, the flanks and the under tail-coverts pale hair-brown, tinged with sienna-yellow. Bill: upper mandible yellowish brown, shaded at base and near the tip with dull chestnut-brown; lower mandible sienna-yellow, shaded near the point with dull chestnut-brown. Tarsi, toes, and claws reddish yellow, the latter lightest. Length 150, wing 69, tail 72, tarsus 19 mm." Adult male.

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* Zool. of South Africa, Plate 79 (1843).

"Only one specimen of this species was obtained, and that was killed while perched upon some brushwood growing near the edge of a small stream to the northward of Kurrichaine. In its habits it resembled the species already described and, at the time it was shot, it was moving quickly about among the branches apparently in quest of its food, which was found to consist of insects."

This species is very similar in appearance to *C. lais* and other members of that group, but is much stouter in build, has the upper surface less clearly streaked, the back more rufous and less contrasted with the crown, the under surface of body less fulvous, and the spots on the tail-feathers much larger, more clearly defined, and extending across both webs often to the margins on both sides. It is easily recognized in a wild state by its harsh and noisy call-notes.

C. chiniana is found throughout the "bushveld" country of South Africa, and its range extends beyond the Zambesi to North-Western Rhodesia and German East Africa. It is usually found amongst scrub near water. At Pretoria it is found sparingly at the "Fountains," and along the course of the Aapies River, individuals occasionally straying into the Zoological Gardens. During the midsummer months the male takes up a position on the peak of the tallest tree in the vicinity of its nest or the particular locality it resides in, uttering at intervals a harsh "churr churr che-che-che"; when alarmed, both sexes utter an irritating "churr churr churr," which they immediately stop when they find themselves in danger. During the winter months this species is usually to be found in small family parties searching actively for insects in the grass and sometimes hopping on the ground; but as soon as the alarm is given the whole party takes to the nearest patch of tangled thorn bushes. Males while singing are very difficult to approach, for when they find themselves watched, they at once leave their conspicuous perches and take to the neighbouring thorn scrub where they are not easily discovered. I have always found this species to be very shy, and for that reason have succeeded in finding very few nests, which were always deserted after the owners had seen me inspect them. A single egg, taken on 13th December last, was left in the nest for two days, but the birds did not return to it, although every precaution was taken not to alarm them. The nest is usually placed amongst mixed dry and green grass in the shelter of some thorn bush, or fallen branch of a tree, and is composed of the same materials as those of other species. The egg is bluish white, much spotted with slate and pinkish brown at the obtuse end, and measures 18 × 12 mm.

Specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tors.	Culm.
5243	N.-W. Rhodesia ..	6/9/07	♀	62	61	22	13
5246	Bulawayo.........	27/5/08	♂	67	66	63	13
5247	,, ...	28/6/08	♂	71	67	23	13
5247	Donje Erok (German East Africa)	22/8/03	♂	65	63	22	13
5249	,, ,,	27/7/03	? (♀)	57	50	20·5	11·5
6755	Goud River, T'vaal	28/7/10	♂	67	65	22	15
6754	Pongola Riv., T'vl	13/7/10	♀	58	62	20	13
6758	Rooiberg, T'vaal..	9/7/10	♂ (juv.?)	58	59	21	13
6756	Rietspruit, T'vaal..	8/7/10	♀ (♂)	69	66	22	14
6757	Zoutpan, Wbg., Tvl.	4/7/10	♀ (♂)	70	66	22	14
6764	Matlabas, T'vaal...	1/7/10	♀ (juv.)	66	66	22	14
6763	,, ...	1/7/10	♂	66	22	61	14
4277	Pretoria District...	6/9/07	♂	69	71	22	14
4278	,, ...	14/10/07	♀ (♂)	70	65	23	13·5
8953	,, ...	13/3/11	♀ (♂)	67	?	22	13
5245	,, ...	18/12/08	♂	68	62	23	13 ?
8954	,, ...	5/6/11	♀	57	57	20	13
6773	Nylstroom........	5/8/09	♂	71	72	22	14·5
6775	,, ...	5/8/09	♂	72	70	23	13
6776	,, ...	5/8/09	♂	65	66	22	13·5
6772	,, ...	5/8/09	♂	67	67	23	14
6774	,, ...	5/8/09	♀	56	55	20	13
6777	,, ...	5/8/09	♀	59	55	20	13
6762	,, ...	27/7/09	♂	70	68	22	13·5
6759	,, ...	26/7/09	? (♂)	68	62	22	?
6761	,, ...	28/7/09	♀	59	54	21	12·5
1617	Marabastad.......	24/11/02	♀	64	62	22	13·5
1618	Klein Letaba.....	5/10/02	♀	65	64	22	?
6768	Koedoes Riv., Tvl.	23/9/10	♀	56	56	20	12
6752	Hector Spruit, Tvl.	10/5/10	♂	64	64	22	13·5
8939	,, ,,	3/6/11	♂	66	61	23	13

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
9179	Inkomati Riv., Tvl.	20/12/11	♂	66	55 ?	21	13
8952	Umbelluzi Riv., P. S. E. Africa	19/5/11	♂	68	63	23	13
8951	,, ,,	17/5/11	♂	69	68	23	13·5
8950	,, ,,	23/5/11	♂	67	61	23	13
8949	,, ,,	27/5/11	♂ (juv.?)	60	57	21	13
8948	,, ,,	25/5/11	♂ (juv.?)	54	51	19	12

NOTE.—Possibly two species occur side by side in the East Coast belt, several naturalists having noted the remarkable difference in size between males collected at the same time and in the same localities; but I am inclined to identify the smaller ones as being juvenile, because some of them have not the tail markings so clearly defined (a sign of juvenility in other species) and because amongst all the specimens I have examined there are none which differ in any other respect as regards colour. In winter the crown is slightly lighter and the flanks rather more inclined to buff than in summer.

GROUP V—*Cisticola* (?) *rufilata.*

(1) Tail 100–115 % length of wing; (2) first primary 60–63 % length of second; (3) tail slender and stiff; (4) beak slender, equal in length to middle toe and more than half the claw; (5) inner toe slightly longer than outer, its claw reaching to base of middle claw; (6) middle claw slender and sharp, half the length of toe; (7) seasonal change, well marked. Inhabits trees growing in parched localities; apparently silent—at any rate, never noisy; and shy of man.

These characters seem to be the same as those of the genus *Spiloptila*; but information as to habits of nest-building and egg-characters are needed to enable one to trace their affinity.

1. *Cisticola rufilata* (Hartlaub).*

The following description of an adult male was taken by Dr. Sharpe from the type specimen, *vide* "Birds of South Africa," p. 269:—

"Above sandy brown, the dorsal feathers mesially dark brown, giving a slightly streaked appearance, these streaks shaded with rufous on each side, imparting a rufous appearance to the back; head and neck uniform light chestnut; wing-coverts light brown, washed and tipped with ashy fulvous, the median series with obsolete indications of a rufescent streak near the tips; quills brown, externally edged with pale rufous especially near the base of the primaries, the margins to the inner secondaries paler; rump uniform sandy brown; upper tail-coverts pale rufous with lighter buff margins; tail light chestnut, all the feathers tipped with buffy white, before which is a blackish brown subterminal bar, the two centre feathers much more narrowly tipped and the subterminal bar very indistinct; lores and a very well marked eyebrow dull white, sides of face yellowish, the upper margins of the ear-coverts inclining to chestnut; cheeks and throat dull white; rest of under surface of body yellowish ochre, darker on the sides and much lighter down the centre; thighs pale chestnut; under wing and tail-coverts yellowish ochre; inner lining of quills ashy brown, margined with rufous along the inner web; bill dark brown, the under mandible yellowish; feet yellowish. Total length 144, wing 58, tail 68, tarsus 24, culmen 14 mm."

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* V. d. Decken's Reisen, IV, p. 238 (1870).

The type specimen was collected by Andersson in Damaraland, and is apparently in summer plumage.

C. rufilata is not uncommon in certain suitable localities of the Transvaal. It is found only in the scattered trees found in arid regions, such as that of the high ground overlooking the "bushveld" of the Pretoria District; it seems to prefer trees surrounded by matted scrub, in which it conceals itself on being alarmed. When found away from the matted scrub, it usually attempts to hide behind the thicker branches of the trees, and when finding itself watched, darts off to another tree. Its movements are restless and remind one of the *Priniidae* rather than the *Cisticolidae*, and I have no doubt that the nest will prove to be like those of the former, or perhaps intermediate between the two. I have not so far heard it utter a sound. In winter it is usually found in family parties, and in summer in pairs. A female shot on 14th December, was searching restlessly for insects, and when pursued made off in a certain direction, no doubt towards its nest, as it proved to have the ovaries much enlarged and was either "sitting" or had just hatched its eggs.

Specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
6839	Pretoria District...	12/2/10	♂	62	58 ?	20	12·5
9178	,, ...	14/12/11	♀	55	55	19	12
6836	,, ...	27/9/10	♀	54	60	19	13
8953	,, ...	29/4/11	♀ (juv.)	55	62	19	12
6834	Nylstroom.........	7/8/09	♂	62	66	21	13
6835	,, ...	6/8/09	♂	59	62	21	13
6838	,, ...	7/8/09	♀	54	57	19	12
9519	Matoppos.........	7/1/05	♂ (♀)	52	51	18	11

NOTE.—Those in winter plumage have the dark centres to the feathers of the back less conspicuous, and the under surface of body slightly more ochreous than those in summer plumage. The juvenile specimen has the marks on the tail-feathers less clearly defined (this mark in adults being broad, extending across both webs, and sharply marked off from the remaining reddish colour of the feather); the under surface is also more ochreous on the under surface of body than in the adults in winter dress.

GROUP VI—*Cisticola* (*Drymodyta*) *tinniens*.

(1) Tail usually longer than wing, but not exceeding 110 %; (2) first primary 52–56 % length of second; (3) tail rather slender and stiff; (4) beak rather weak, equal in length to middle toe and half the claw; (5) inner toe rather longer than outer, its nail reaching just beyond the base of middle claw; (6) middle claw half length of toe; (7) little noticeable seasonal change, except in males, which in winter become streaked on the crown. Inhabits rank grass and weeds on the banks of open rivers, streams, and reservoirs; voice a melancholy "cheep" when alarmed.

Cisticola tinniens (Lichtenstein).*

Plate—Smith's Ill. "Zool. of S.A.," Pl. 73, fig. 2 (as *Drymoica levaillanti*).

The following is copied from Smith's description:—"The upper parts of the head and the upper and lateral parts of the neck, bright chestnut-brown, the two first variegated with umber brown stripes, one along the centre of each feather; interscapulars, back and tail-coverts liver-brown, each feather edged on both sides with pale wood-brown; lesser wing-coverts umber-brown, broadly edged and tipped with pale broccoli-brown. Primary and secondary quill-coverts and the tertiary quill-feathers liver-brown, and indistinctly edged externally with pale wood-brown; primary and secondary quill feathers light brownish red, edged with chestnut-brown. Under parts pale wood-brown, the throat lightest and inclining to white. Tail feathers light umber-brown, margined externally with pale chestnut-brown, and broadly tipped with dull wood-brown; behind the light points each feather is marked with a circumscribed liver-brown blotch, which is much darker than the general colour of the feather, and is most readily seen on the under surface of the tail. Eyebrows and sides of the head wood-brown. Bill horn-coloured, the lower mandible lightest; legs and toes pale buff-orange; claws horn-coloured. Eyes deep chestnut-brown. Length 103, wing 57, tail 67, tarsus 18 mm."

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* Verz. einer Samml. v. Saug., u. Vog. Kaffr., p. 13 (1842).

Juvenile and female specimens have the hinder part of the crown faintly streaked, while males alone in summer have the whole top of the head plain.

This species was described by both Lichtenstein and Smith in the year 1842; but custom has prescribed the use of the former's name.

Levaillant's grass-warbler is the most widely distributed species in South Africa, being found from the coast to a height of six thousand or more feet above the sea-level; the hot "lowveld," the cold "highveld," and the arid districts of the Western Transvaal suit it equally well, provided there are streams or reservoirs in such situations producing a growth of certain weeds and rank grass. It is nearly always to be found in the weeds growing near water close to homesteads, and is less shy than any of its congeners, frequently building its nest in the weeds growing in open furrows of the larger towns, such as Potchefstroom and Pretoria, where people are constantly passing to and fro within a few feet of it. The nest differs from those of most other species in being usually slung between the leaves and stalks of weeds a foot or two from the ground, and the outside is generally covered with darker coloured material. The choice of a nesting site is not restricted, however, and is often adapted to local conditions. At a certain place on the banks of the Mooi River at Potchefstroom where this bird was very common, and the nests were constantly being robbed by boys who were in the habit of bathing in the vicinity, these birds became very cunning, hiding their nests close up against the bank—this often forming the back of the nest for want of space—under some creeping grass which hung over the bank; these nests were so cleverly concealed that to find them it was necessary to watch carefully where the bird flew out, or systematically to lift up the grass and search behind it. Eggs are laid throughout the summer months—October to March—the clutch consisting of from three to five, and even more; they vary to a remarkable degree in colour, and measure 14–16 × 11·5–12·5 mm.

There are about fifty specimens of this species in the Transvaal Museum collection, and as they vary very little *inter se*, it is hardly necessary to give detailed measurements; they were collected at the following localities: (Cape Colony) Knysna, Port Elizabeth, Pondoland; (Natal) Dargle; (Transvaal) Belfast, The Woodbush, Groot Spelonken, Marabastad, Warmbaths, Pongola River; (Northern Transvaal) Pretoria, Potchefstroom; and (Orange Free State) Honingspruit Station. Maximum and minimum measurements of these specimens are: wing 47–59, tail 44–61, tarsus 17–21, and culmen 10–12 mm.; males are slightly larger than females. Sometimes individuals are streaked on the flanks, but not apparently under any rule.

GROUP VII—*Cisticola lugubris.*

(1) Tail 80–100 % length of wing; (2) first primary 56–62 % length of second; (3) tail feathers broad in proportion to length, rather stiff; (4) beak medium, equal in length to middle toe without claw; (5) inner toe slightly longer than outer, its claw reaching to base of middle claw; (6) middle claw weak but sharp, less than half the length of toe; legs and feet stout; (7) seasonal changes well marked, in winter the tail being longer, and the upper surface of body and crown more clearly streaked, the margins of the feathers being buff and showing up the dark centres. Inhabits open marshes in tropical regions.

Cisticola lugubris (Rüppell).*

Plates—Rupp. Syst. Ueb., Pl. 11 and 12; V. d. Decken's Reisen III, Pl. 2, fig. 2; Ibis 1869, Pl. 2, fig. 2.

The following description is taken from Sharpe's "Birds of South Africa," p. 269, in which the species is placed as *C. fulvifrons*:—

"Adult ♀. Head pale rufous, inclining to ashy-brown on the nape; the back and scapulars ashy-brown, especially the mantle, the rest broadly black in the centre of the feathers, some of which are edged with sandy buff; lower back, rump, and upper tail-coverts ashy-grey, the latter rather more dusky with slightly paler edges; wing-coverts ashy brown with black centre, the median series with rufous tips, the greater coverts tawny rufous with long black centres; quills dusky brown, externally edged with tawny rufous, paler towards the tips of the primaries, the inner secondaries edged all round with ashy; quills dark brown, edged with ashy and broadly tipped with white, before which the brown deepens into a black bar, which is apparent on all but the two centre feathers, these having only a dusky subterminal spot, and no white tips; lores and a faint eyebrow buffy-white; ear-coverts very pale fulvous brown, clearer buff on the lower parts adjoining the cheeks, which are yellowish; throat and centre of abdomen white; breast whitish, washed with pale yellow, the flanks slightly shaded with ashy-brown; thighs tawny; under wing-coverts whitish with a pale wash of fawn-colour; bill dusky; tarsi and feet pale; iris light reddish brown. Total length 127, wing 53, tarsus 24, culmen 22 (13 ?).

"The male is somewhat larger, measuring as follows:—Wing 59, tarsus 25, culmen 15 mm."

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* Neue Wirb. Abyss-Vogel, p. 111 (1835).

The specimens from Durban described as *C. fulvifrons* are said to be identical with *C. lugubris* of Abyssinia (*vide* Sharpe, " Birds of S.A.," p. 823). No account seems to have been given of the winter plumage of this species, and I suspect that specimens in that condition have been regarded as a distinct species.

C. lugubris is widely distributed over the tropical parts of the Ethiopian region, apparently occurring in the same situations as *C. natalensis*. The following notes on the habits of this species by the late A. D. Millar are recorded in Stark and Sclater's " Fauna of S.A." : "Is essentially a marsh-warbler, and builds in the vleis in the vicinity of Durban during the month of December. They nest in the coarse vlei grass or amongst the bracken growing in or about the marshes two or three feet from the ground. The nest is constructed outwardly of the dried blades of the coarse vlei grass, cobwebbed and lined interiorly with the heads of flowery grasses and other feathery weed-flowers. The clutch consists of three beautiful shining brick-red eggs, measuring 16 × 12·5 mm. During the breeding season the habits of this bird much resemble those of *C. natalensis*, and in the early morning they may be seen flitting about the vleis guarding their nests and haunts against any intruder who chances to fly past and uttering a continued chirp."

Specimens in the Transvaal Museum collection :—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
5275	Beira.............	11/1/06	♀ (aest.)	57	47	23	12
3524	N.-W. Rhodesia ...	6/9/07	♂ (hiem)	61	61	23	13
3525	,, ...	12/9/07	♀ (hiem)	56	57	22	13
5273	Machile Riv., N.-W. Rhodesia	3/10/08	♂ (hiem)	60	59	21·5	12
5274	,, ,,	2/10/08	♀ (hiem)	55	58	20	12
8946	Kesii, B.E.A.......	–/9/10	? (♂ aest.)	60	51	22·5	14
8993	,, ...	–/9/10	♂ (juv.)	55	56	22	12·5

NOTE.—The specimens in winter plumage are brighter rufous and streaked on the crown and the broad black centres of the feathers of the back are set off by the paler margins which are more conspicuous and buff in place of ashy brown ; the tail is also longer. The juvenile specimen is much yellower on the breast and throat, yellowish rufous on the upper surface of head and body, and the black of the feathers of the back not so broad and conspicuous ; the whole appearance of this specimen insures its identity as to juvenility.

GROUP VIII—*Cisticola semitorques.*

(1) Tail (in summer) 85 % length of wing ; (2) first primary 62 % length of second ; (3) tail feathers broad, stiff ; (4) beak slender, slightly longer than middle toe without claw ; (5) inner and outer toes equal, their claws extending beyond base of the middle claw ; (6) middle claw weak but sharp, nearly half the length of toe ; legs and feet not stout. Seasonal changes not known. Inhabits borders of, and glades in, forests of mountainous regions in the hotter parts of Eastern Ethiopia.

NOTE.—These characters have been taken from a single specimen and require confirmation.

Cisticola semitorques (Heugl.).*

The name of *D. cinerascens* was also applied by Heuglin to this species in 1867. *D. concolor*, described by the same author in 1869, appears to represent the winter plumage of this species; it is figured in the Ibis, 1869, Pl. 2, fig. 1. The type of *D. semitorques* came from Bogos in North-East Africa, and it has a wide range, having been recorded as far south as Hlabisa in Zululand; in the west its place seems to be taken by *C. rufopileata*, Reichenow. Specimens from Chirinda Forest, Southern Rhodesia, have been identified with this species, and the following description is taken from an old male in breeding plumage from that place:—

Top of head cinnamon, merging on the nape and hind-neck into the olive grey colour of the back; rump and upper tail-coverts paler than the back; the whole upper surface not streaked; tail for the greater part like the rump with a broad black band, subterminally, across both webs of each feather, and white tips to all but the two middle ones; lores and cheeks yellowish white, the ear-coverts similar, but becoming rufous on the hinder tips next to the nape; chin, throat and middle of abdomen white, darker on the sides and breast and tinged with fulvous; thighs pale rufous, under tail-coverts white tinged with fulvous; under wing-coverts isabelline rufous, inner margins at the base of the primaries and secondaries isabelline; upper aspect of primaries brown with broad rufous external margins for the basal two-thirds, and pale wood-brown margins for the terminal third; greater wing coverts and inner secondaries also margined externally with rufous; primary-coverts and bastard-wing less conspicuously margined with rufous and showing up dark against the lighter coloured primaries; remaining wing-coverts like the back; edge of wing white. Bill entirely black; legs and feet flesh colour. Length in the flesh 135 mm.; wing 54, tail 47, tarsus 22, culmen 12·5 mm.

The female is described by Heuglin as having the "frontal region only tinged with ferruginous."

Mr. C. F. M. Swynnerton (*vide* Ibis, 1908, p. 77) has given a full account of the habits of this species as observed at Chirinda; these habits seem to be much the same as those of *C. lais*; the nests described by the same writer (*vide* Journ. S.A.O.U., Vol. 7, p. 14) seem also to resemble those of *lais*, and the eggs measure 17–18·5 × 12–12·5 mm., varying in colour like those of all the *Cisticolinae*.

GROUP IX—*Cisticola natalensis*.

(1) Tail in summer about 70–80 % length of wing, in winter about 100 %; (2) first primary 55–65 % length of second; (3) tail broad, stiff and shorter in summer, longer and not so stiff in winter; (4) beak conical and very stout in ♂, slightly less so in ♀, in length shorter than middle toe without claw; (5) inner toe distinctly longer than outer, its claw reaching beyond the base of middle claw; legs and feet very stout; (6) middle claw long and sharp, half the length of toe; (7) seasonal changes very marked both in plumage and length of tail. Inhabits open marsh country amongst scattered trees in tropical parts of the Ethiopian region; voice harsh and unmusical.

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* Journ. f. Orn., 1862, p. 40.

Cisticola natalensis (A. Smith).*

Plates—Smith's Ill. "Zool. of S.A.," Pl. 80 (hiem.); Holub and von Pelzeln's "Orn. Zud-Afrikas," Pl. 1 (aest.); and Heuglin's "Orn. N.O. Afr.," Pl. 7 (aest. ult.).

Owing to the great difference in plumage in summer and winter, and to its worn condition at some periods, and the difference in size between the sexes, a number of names have been applied to this species. Since it is widely distributed in suitable localities over the hotter parts of Ethiopia, there may be minor differences amongst those found in some localities; but these differences have not so far been studied. The type of Smith's *D. natalensis* was collected in Natal. I have not had access to Sundeval's paper in which a number of *Cisticolidae* have been described, but it seems to me that his *D. obscura*, which has been given a place in Stark and Sclater's work on South African ornithology, and placed in the synonymy of *C. chiniana* by Reichenow, should be referred to this species, as the beak is described as being 5 mm. in height, a character alone sufficient to distinguish it from other South African species.

The following description of a ♂ in winter plumage is taken from Smith's text to the figure above mentioned:—

"The upper surface of head, the back and sides of neck, the interscapulars, the back, the upper tail-coverts, the lesser wing-coverts, and the rump intermediate between reddish and buff-orange, and each of the feathers, excepting those of the rump, marked in the course of the shaft with a broad longitudinal dark umber-brown stripe. Tail reddish brown, edged with reddish orange, and tipped with pale buff-orange; behind each light tip a broad transverse bar of deep umber-brown, the bars indistinct on the two centre feathers; the tips of several of the lateral feathers nearly pure white. Primary and quill-coverts umber-brown, margined and tipped with pale buff-orange. Primary and secondary quill feathers brownish red, margined, externally, towards the quills, with dull reddish orange; tertiary quill feathers deep umber-brown, margined and tipped with reddish orange. Chin and throat white; breast, belly, vent, and under tail-coverts sienna-yellow, the flanks darkest. Bill pale sienna-yellow, the upper mandible towards culmen deep reddish brown; legs, toes, and claws pale reddish orange. Length 183, wing 76, tail 84, tarsus 28 mm."

The following description of the bird in summer plumage is taken from Sharpe's "Birds of S.A.," p. 263, in which it is placed as *C. curvirostris*:—

"Adult ♂.—General colour above brown, all the feathers margined with ashy-buff, giving a strikingly grey appearance to the upper surface, the head more or less uniform brown without dark mesial streaks; the feathers of the hinder neck slightly margined with sandy colour; wing-coverts brown, the edgings to the majority clear grey, the least and some of the greater series margined with sandy; quills dark brown with indistinct light tips, the primaries edged with sandy rufous, the inner secondaries edged all round with light buff; rump and upper tail-coverts nearly uniform greyish, the latter with dark brown bases, or centres to the feathers, giving a streaked mottled appearance; tail ashy-brown, tipped with white and faintly margined with pale sandy; the white tips indistinct on the two centre feathers which have a plain subterminal bar of black, as also have all the other feathers; lores greyish white; eyebrow greyish; sides of face dull white, the ear-coverts washed with greyish brown and narrowly streaked with white down the shaft; sides of neck greyish; throat and centre of body white; the sides tawny-yellow, the upper breast laterally ashy brown; thighs deep tawny. Total length 152, wing 72, tail 61, tarsus 28, culmen 16 mm.

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* Zool. of South Africa, Plate 80 (1843).

"Adult ♀.—Similar to the male, but much smaller. Total length 122, wing 60, tail 51, tarsus 26, culmen 15 mm."

As far as I can judge from the available literature, I think that the following should be referred to this species:—

Drymoica strangei, Fraser, P.Z.S., 1843, p. 16.
Drymoica curvirostris, Sund., Oef. Vet. Ak. Forh., 1850, p. 104.
Drymoica chloris, Sund., Oef. Vet. Ak. Forh., 1850, p. 104.
Drymoica obscura, Sund., Oef. Vet. Ak. Forh., 1850, p. 103.
Drymoica fortirostris, Jard. and Fras., Contr. Orn., 1852, p. 160.
Drymoica malzacii, Heugl., Stbz. Ak. Wein., 1854, p. 274.
Drymoica naevia, Hartlaub., Syst. Orn. W. Afr., 1857, p. 56.
Drymoica valida, Heugl., Journ. Orn., 1864, p. 258.
Drymoica pachyryncha, Heugl., Ibis, 1869, p. 130.
Drymoica angolensis, Bocage, Jorn. Lisb., 22, 1877, p. 160.
Drymoica holubi, v. Pelz., Orn. Zud-Afr., 1882, p. 72.

This grass-warbler is found in South Africa from Pondoland and Kingwilliamstown northwards along the coast belt of marshy country to the Zambesi Valley, and beyond that to British East Africa; it seems also to occur in suitable localities in Central Africa generally, and on the West Coast from Angola to Senegambia.

In the coast districts of Natal it is not uncommon, and I have taken its eggs at Somkele, Zululand, in December. The nest is usually placed in a bunch of mixed dry and green grass on the edge of a patch of thorn scrub; it is of the usual shape and is constructed of the same materials as those of other species, but is larger in size. The eggs vary in colour, and measure 17·8–18·3 × 13·4 mm. During the breeding season the male while uttering a clacking note often takes flights up into the air, but never rises to a great height as does *Hemipteryx*.

Specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
8944	Port St. Johns, Pondoland	8/1/11	♂	75	56	29	14
4269	,, ,,	15/9/11	♂	77	71	30	15
8943	,, ,,	15/1/11	♂ (♀)	60	45	25	13
8942	,, ,,	29/7/11	♀	62	64	26	13
4268	,, ,,	9/10/07	♀	63	62	27	14
5238	,, ,,	12/12/07	♀ (juv.?)	64	64	26	13·5
5239	,, ,,	13/12/07	♀	62	48	27	13
5237	,, ,,	15/1/08	♂ (♀)	60	48	26	14
5240	,, ,,	13/12/07	♀	63	51	25	14

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
4266	Umtamvuma Riv., Pondoland	–/6/08	♀	63	67	27	14
4265	,, ,,	–/6/08	♂	73	?	28	15
4267	Noodsberg, Natal..	–/2/08	♂	73	?	27	14
6829	Hector Spruit, E. Transvaal	13/9/10	♂	73	70	28	13·5
6827	,, ,,	25/5/10	♂	74	74	27	15
6825	,, ,,	15/7/10	♂	72	74	28	14
8941	,, ,,	20/5/11	♀	63	59	25	13
6824	,, ,,	1/3/11	♂ (♀)	63	55	25	12
8940	,, ,,	1/6/10	♀	62	58	24	12
6826	,, ,,	30/5/10	♂ (♀)	60	50	24·5	13
5255	Matoppos, Rhodesia	19/4/08	♂	71	58	27	14
5241	Beira, P. E. Africa	26/12/06	♂	71	55	27	15
5253	,, ,,	1/9/07	♀	62	60	24	13
5254	Boror, P. E. Africa	?	(♂ hiem.)	72	65	27	14·5
5242	,, ,,	28/4/08	♀ (aest.)	60	49	25	14
8945	Kesii, Brit. E. Africa	–/9/10	♀ (♂)	72	50	27	14

NOTE.—The adult ♂♂ in summer plumage have the maxilla black, and the mandible white for the apical half, black like the maxilla on the basal portion; in the case of adult ♂♂ in winter plumage, the whole of the mandible is horn-colour and the maxilla is dark brown.

GROUP X—*Cisticola erythrops.*

(1) Tail and wing about equal in length; (2) first primary 62–68 % length of second; (3) tail broad and soft; (4) beak medium, in length equal to middle toe and half the claw; (5) inner and outer toes equal, their claws reaching beyond base of middle claw; (6) middle claw less than half length of toe, rather weak but sharp; legs and feet slender; (7) seasonal changes not noted. Inhabits short grass and bushes under shelter of the forests of tropical Ethiopia.

Cisticola erythrops (Hartlaub).*

The following description is taken from Sharpe's Catalogue of Birds in the British Museum, Vol. 7, p. 250:—

"General colour above ashy olive-brown, with tufts of silky-buff feathers on each side of the rump; lesser wing-coverts like the back; median and greater coverts, bastard wing, primary-coverts and quills ashy, with narrow rufescent margins; quills ashy-brown, with rufous-brown edges; the inner secondaries more ashy, with indistinct dusky cross markings and pale fulvescent edges; upper tail-coverts like the back; centre tail-feathers ashy-olive, the remainder clearer ashy with broad yellowish-buff ends to the feathers, preceded by a broad bar of black; crown of the head like the back, the base of the forehead tawny rufous, with a shade of the latter extending over the hinder crown and occiput; lores and eyebrows tawny buff, paler on the former; feathers round the eye, ear-coverts and cheeks also tawny buff; throat and under surface of body pale tawny buff, whiter on the throat, breast, and abdomen; sides of body and flanks ashy grey; thighs deep tawny; under tail-coverts tawny buff; under wing-coverts and axillaries deep tawny; quills below dusky; inner edge of quills tawny. Total length 135, wing 55, tail 57, tarsus 24, culmen 14 mm.

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* Orn. Westafrikas, p. 58 (1857).

"Young.—Like the adult, distinguished by its rufous face, but differing from it by its nearly uniform rufous-brown colouration and deep tawny under surface, only the throat and abdomen being white."

The type of *C. erythrops* was collected at Kalabar on the West Coast, and since its discovery specimens have been recorded from a number of localities scattered over the forested regions of Central and East Africa, as well as from various places in the West.

Very little has been recorded of the habits of this species. Alexander states that he found it in the fish-cane which grows on the banks of the upper reaches of the Zambesi, and that in habits it reminded him more of the Reed-warblers than the *Cisticolidae*. In the open forest of the marshy regions of Boror, I found it in small parties hunting for insects amongst the grass and stunted bushes.

Specimens in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Tail.	Tars.	Culm.
5293	Boror, P. E. Africa	?	? (♂)	55	50	23	13
5294	,, ,,	2/7/08	♀	48	48	21	12·5
5283	,, ,,	6/5/08	♂ ? (juv.)	59	55	23	14
5290	,, ,,	5/7/08	♀ (juv.)	49	44	21	12
6821	Hector Spruit, E. Transvaal	23/1/10	♂	57	56	21	14
6820	,, ,,	7/2/10	♂	52	49	21	14

NOTE.—The four specimens from Boror all differ from each other; 5293 is apparently an adult ♂; 5294 is an adult ♀, differing from the supposed adult ♂ in having the whole upper surface washed with orange-rufous, the forehead and eyebrows like the ear-coverts and sides of face orange-tawny, and the crown somewhat brighter than the back; 5283 is quite young, judging by the feathering, and has the whole upper surface pale rufous with slight indications of streaks on some of the feathers of the back; and the under surface, including the sides of face and throat, dull yellowish white, darker on the flanks and breast, which are also slightly tinged with rufous; 5290 is a young ♀, resembling the young ♂ in having the whole upper surface pale rufous, but the top of the head is much brighter coloured, contrasting strongly with the back; the back is also faintly streaked. This specimen seems to agree fairly well with Peter's *D. procera*, which was taken at Tette, in the vicinity of Boror. The two specimens from Hector Spruit (the first record of its occurrence so far south) are both coloured exactly like No. 5293 from Boror. Another specimen in the collection from N.-W. Rhodesia, labelled as *C. sylvia*, seems to me to be referable to this species too, but its plumage is somewhat worn.

GROUP XI—*Cisticola pusilla*.

(1) Tail about 90 % length of wing; (2) first primary 56–60 % length of second; (3) tail very broad and rather stiff; (4) beak weak, equal in length to middle toe and half the claw; (5) inner and outer toes about equal, their claws barely reaching to the base of the middle claw; (6) middle claw about half the length of toe, weak but sharp; (7) seasonal changes not noted. Inhabits open glades in forested regions of Portuguese East Africa.

Cisticola pusilla Gun. and Rbts.

The following description is copied from the original (Annals T.M., 1911, p. 118) :—

" Very similar to *C. rufa* of West Africa, but readily distinguished by its longer first primary, which exceeds half the length of the second.

" Upper surface pale rufous brown, the crown darker ; lores, chin, throat and middle of abdomen white ; flanks and thighs brownish buff, remaining under surface pale buffish ; under wing-coverts silky vinous buff ; tail feathers very broad, the central pair like the back, but having a broad dark subterminal smudge and pale tip ; the remaining tail feathers with the subterminal mark more pronounced ; primaries and secondaries dusky, with rufous outer and whitish inner margins ; wing-coverts like the back. Iris grey, maxilla brown, the lower mandible pale brownish pink ; legs and feet pale pinkish yellow. Length 109, wing 48, tail 38 (?), tarsus 21, culmen 11 mm." The female is smaller, measuring : wing 42, tail 38 mm. The type was collected in Boror and the co-type near Beira.

Little has been recorded of the habits of this species. Grant in writing of specimens collected near Beira (presumably of this species) states : " This species was only found near Beira, where it was not uncommon. I have only observed it singly ; it frequents the long grass and vegetation in the vleis and the borders of woods and deserted native lands. It is very active in habits, the call being a squeaky note ; flight is seldom indulged in."

GROUP XII—*Cisticola terrestris.*

(1) Tail in summer 58–75 %, in winter 80–90 % length of wing ; (2) first primary 40–53 % length of second ; (3) tail broad and stiff, especially during the summer ; (4) beak strong, but narrow and sharp, equal in length to the middle toe without claw or a little shorter ; (5) inner toe longer than outer, its claw reaching beyond base of middle claw ; (6) middle claw less than half the length of toe ; (7) seasonal change of plumage very marked. Inhabits open grassy veld.

Cisticola terrestris (A. Smith).*

Plate—Smith's Ill. " Zool. of S.A.," Pl. 74, fig. 2.

The following is a copy of Smith's original description :—

" Top of head and interscapulars umber-brown, variegated with yellowish brown, from all the feathers being edged and tipped with the latter colour ; the back of the neck, the back and the shoulders clear yellowish brown dashed with longitudinal umber-brown streaks, one streak along the middle of each feather—the variegations few and indistinct on the back. Tail-coverts umber-brown, margined and tipped with yellowish brown. The sides of the head and neck pale yellowish brown, the latter behind fading into white. The primary and secondary quill coverts umber-brown along their centres, wood-brown at edges and tips. Primary and secondary quill-feathers broccoli-brown, narrowly margined externally with dull wood-brown ; tertiary quill feathers umber-brown, broadly margined and tipped with yellowish brown. Chin and throat yellowish white; breast, belly, vent, and feathers of legs sienna-yellow, the tint of the flanks darkest. The two middle tail feathers broccoli-brown, broadly margined and tipped with wood-brown, the rest of the feathers brownish red, faintly edged externally with wood-brown and broadly tipped with white; immediately behind the white tip there is a large blotch of umber-brown seen most distinctly on viewing the under surface of the feathers. Bill, legs, and toes pale buff-orange, the upper mandible deepened from a shade of brown; claws yellowish brown, darkest at the points. Eyes reddish brown.

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* Zool. of South Africa, Plate 74, fig. 2 (1849).

"Total length 110, wing 52, tail 42, tarsus 20, middle toe 9 mm.

"Female.—The colours are rather brighter and the proportion of umber-brown is rather less than in the male. The bill is more delicate and shorter."

Since publication of the "Catalogue of Birds" in the British Museum, all specimens of *Hemipteryx* other than *textrix* have been referred to *C. terrestris*; but this can hardly be correct, as Smith mentions a distinct subterminal mark on the tail feathers viewed from below, a character apparently not found in any members of the genus *Hemipteryx*; in describing the structure of the species Smith also mentions that the first primary is about half the length of the second.

The specimen from which the male was described, was probably not quite adult, and this would account for the female being described as brighter coloured; the chin and throat are described as yellowish, a character peculiar to juvenile birds, judging by the series in the Transvaal Museum.

Specimens of this species in summer plumage were first identified with *C. cisticola*, and subsequently with *C. uropygialis*; but having regard to the great difference in local conditions of Accra on the West Coast (where the type of *uropygialis* was collected) and South Africa, I have retained Smith's name until large series of specimens from the two localities have been compared, and their identity fully determined.

The species is represented in the Transvaal Museum collection by a large series of skins, which may be most conveniently tabulated in three divisions:—

Males in Summer Plumage.

No.	Locality.	Date.	Wing.	1st Prim.	Tail.	Tar.	Mid. Toe.	Culm.
827	Zoutpansberg.	11/2/03	53	14	35	19	9	9
6994	Moorddrift, Waterberg	23/10/09	52	?	30	17·5	9·5	10
6995	,, ,,	17/10/09	52	14	33	17·5	9	10
6987	Pretoria......	18/12/09	50	13	33	19	9·5	10
6989	,, ...	?	54	14	35	18·5	9·5	10·5
6991	Wakkerstroom	25/10/09	53	14	34	18	9·5	10
6990	,,	9/10/09	54	15	33	18·5	9·5	10
6992	Red Hill, Natal	12/3/10	54	15	34	18	9·5	10
9183	Matatiele, E.G.	26/11/11	54	16	35	18	9·5	10
9529	,, ,,	31/12/11	53	13	34	18·5	10	10

The specimens collected at Wakkerstroom are in freshly moulted plumage, and the following description taken from them may be regarded as typical of the species at that season :—

Crown brown with indistinct pale margins to the feathers, producing a faintly streaked appearance, back of neck paler and more sandy coloured, forming a patch between the head and darker coloured back ; scapulars and upper part of back variegated with very dark brown, sandy rufous and white, each of the feathers being very dark brown for the greater part, margined with sandy rufous, and some of the outer tips edged with white ; lower back and rump uniform bright rufous ; upper tail-coverts like the rump, but with dark centres to the feathers, the dark centres being hidden by the overlapping rufous tips ; tail feathers more or less dark brown, tinged with rufous, especially on the outer margins, with white tips, and a distinct rufous subterminal patch on the inner web of all but the two middle ones ; seen from below the tail feathers are lighter coloured, showing off a distinct large dark brown subterminal mark on both webs ; primaries brown, the basal half of each margined externally with wood-brown ; outer secondaries like the primaries, the inner like the wing-coverts ; all the wing-coverts dark brown, broadly margined with pale sandy yellow ; lores, chin, throat and middle of under surface of body white ; breast and under tail-coverts pale buff ; flanks, thighs, and under wing-coverts bright tawny rufous. Iris straw-colour ; maxilla brown, mandible horn-colour ; legs and feet flesh-colour. Length in the flesh 107 mm.

As the season advances the plumage of the upper surface becomes frayed and is then more uniform, especially on the crown. The specimens from Moorddrift have not assumed the full summer dress, and in one the outermost primaries are in a half-moulted condition.

Females in Summer Plumage.

No.	Locality.	Date.	Wing.	1st Prim.	Tail.	Tars.	Mid. Toe.	Culm.
6987	Pretoria......	18/12/09	50	14	35	18	9	10·5
9530	Matatiele.....	8/2/12	48	13	36	17	8·5	9
9209	Matoppos, Rho.	17/4/08	47	12 ?	33	17	9	9·5

These differ from the adult males in having the crown more distinctly streaked and the forehead paler. A Pretoria specimen measured in the flesh is given as 101 mm. in length.

Specimens in Winter and Juvenile Plumage.

No.	Locality.	Date.	Sex.	Wing.	1st Prim.	Tail.	Tars.	Mid. Toe.	Culm.
6985	Goud Riv., Tvl.	21/7/10	?	49	15	43	18·5	9·5	10
6986	Pretoria.......	6/8/10	♂ (?)	49	16	40	18	9·5	?
8989	,, ...	13/3/11	♀	49	16	33	18	9·5	10
8988	Umbelluzi River	20/5/11	?	47	?	39	18	9·5	10
6993	Red Hill......	15/4/10	♀ (juv.)	46	16	38	17	9	10
8990	Matatiele......	2/8/11	♂ (?)	47	16	39	17	9	10
9531	,, ...	3/3/12	♂ (juv.)	50	17	36	18	9	10
9676	,, ...	8/2/12	♂ (juv.)	48	13	36	17	9	10
9532	,, ...	3/3/12	♀ (juv.)	47	17	34	16	9	10

These are all streaked on the head and upper surface generally—except the rump—with broader and richer coloured margins than in the adults in summer plumage. The juvenile specimens collected in February and March are yellowish on the throat, breast, and flanks, this colour apparently changing to whitish on the breast and throat, and rufous on the flanks before the winter months; the youngest specimens are the yellowest.

In a wild state these birds are not easily distinguished from *Hemipteryx* which frequents the same localities, and I am unable, therefore, to give much information about them; but their nests are quite distinct, being truly cisticoline in shape and composition; they are placed in a tuft of grass (usually on one side) in the open veld. The eggs vary a good deal in colour, and measure 15–16·3 × 11–11·6 mm.

GROUP XIII—*Cisticola lavendulae.*

(1) Tail in summer 70–75 %, in winter 80–85 % length of wing; (2) first primary 28–36 % length of second; (3) tail narrow and stiff; (4) beak strong, but narrow and sharply pointed, equal in length to middle toe and half the claw; (5) inner toe slightly longer than outer, its claw not extending beyond base of middle claw; (6) middle claw weak, less than half the length of toe; (7) seasonal change not so marked as in *C. terrestris.* Inhabits open veld in barren country.

Cisticola lavendulae, Gr. and Reid.*

The types of this species were collected in Somaliland, but since its discovery it has been recorded from German East Africa, Damaraland, and the Transvaal. Male specimens from the Transvaal appear to be somewhat larger than the type, measuring from 110 to 118 mm. in the flesh, that of the type being given as 106 mm.

The original description is short, and I am therefore giving the following, taken from an adult male in breeding plumage collected at Wolmaransstad on 25th November:—

Crown light brown, centres of feathers darkest and the margins paler, producing a faintly streaked appearance; forehead uniform and more tawny coloured than the crown; hindneck much paler than the head, almost white in parts; back like the crown, but more broadly margined with dull white; plumes of the lower back and rump pale tawny rufous; upper tail-coverts and middle tail feathers dark brown with paler margins; rest of tail feathers, seen from above, darker brown with broad white tips, the white on the outermost extending round the outer web as well; seen from below, the tail feathers are dark grey-brown, faintly and irregularly rayed with darker brown, often forming a tolerably distinct subterminal patch; the white tips to the tail feathers measure 3–4 mm. Upper lores and eyebrow white, the latter narrow but distinct; a blackish spot before the eye, produced by all the bristles on the lower lores being tipped with blackish; ear-coverts like the hindneck; throat, chin, cheeks, and under surface of body white, flanks and thighs pale tawny rufous, and the under wing-coverts isabelline. Upper wing-coverts like the back, the primaries and secondaries brown and broadly edged with pale wood-brown externally. Iris straw-colour; maxilla pale brown, mandible bluish horn-colour; legs and feet dull white. Length in flesh 112 mm.

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* Ibis, 1901, p. 650.

Females differ from the males in being more clearly streaked on the head and upper surface generally, and in lacking the dark spot in front of the eye.

In winter both sexes are more distinctly streaked, and since the margins of the feathers are more sandy rufous, the lower back and rump does not show up in such contrast as in summer.

Specimens in the Transvaal Museum collection :—

No.	Locality.	Date.	Sex.	Wing.	1st Prim.	Tail.	Tars.	Mid. Toe.	Culm.
6984	Wolmaransstad...	25/11/10	♂	53	13	42	18·5	9	11
830	Klein Letaba.....	27/1/03	♂	52	11	38	18	8·5	10
6983	Pretoria..........	22/12/09	♂	52	11	38	19	9	11·5
9181	,, ...	29/12/11	♂	50	11	38	18	9	11·5
9185	,, ...	14/12/11	♀	48	12	34	18	9	10
6981	,, ...	5/8/09	♀	50	12	41	19	8·5	10
9520	,, ...	16/1/12	♀	52	11	39	19	9·5	11·5
6979	Warmbaths......	1/8/09	♀	54	10·5	42	19	9·5	11
6980	Pretoria..........	6/8/09	♂	50	15	42	19	8·5	10
6982	,, ...	15/7/09	♂	54	15	46	19	9·5	11
6978	Warmbaths......	27/7/08	♀	52	15	42	19	9	?

The last three specimens are probably juveniles.

This species is not uncommon in open barren veld, and occurs also in the bushveld. It may be readily distinguished in a wild state by its general slender form and pale colouration. The specimen tabulated as collected on 14th December was shot in some tall grass in an open part of the bushveld, and was found to have its ovaries very much enlarged. The nests of this species are not easily distinguished from those of *C. terrestris*; but the situations in which the two species are found are different. Two eggs in the Transvaal Museum collection, taken at Potchefstroom on 14th December, are white, freely spotted with red-brown overlying two shades of slate colour, and measure 16·6 × 11·5 and 16·2 × 11·4 mm. respectively.

The flight of these birds is sometimes wavy, but more often direct and close to the ground. I have not so far been able to identify a song with this species, its only call-note seeming to be a few notes, something like "click-click-click."

Hemipteryx, Swainson.*

We have now to deal with another genus, consisting of a large number of species which frequent only the open veld; few notes have been made on their habits, with the exception of one species. Some members of this genus have a beautiful piping song, which has often puzzled the hearers as to its source. This consists of a few clear notes, sounding like "ko ko ko keh," repeated at short intervals, becoming fainter and fainter, and terminating in a rapid run of notes becoming louder and louder. This effect is caused by the bird making short flights upwards, singing the four notes with each rise, then diving forwards and slightly downwards and rising in a loop, repeating the notes and diving again until the bird is a mere speck against the sky and the notes float faintly down to us; when tired of its exertions, the bird comes down to earth again uttering the run of rapidly repeated notes. A number of different notes are distinguishable, presumably uttered by different species; and some individuals do not appear to rise to a great height while singing; but these notes and habits have not so far been identified with particular species. Members of this genus are widely distributed over the open veld regions of Africa, and having regard to the fact that amongst the few skins in the Transvaal Museum collection no less than four species are distinguishable, there seems to be no reason why many more species should not be found to exist throughout the Continent.

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* Lardner's Encyclopoedia Nat. Hist. Birds, II, p. 242 (1837).

The following diagnostic characters are taken from external appearance, but having regard to the power of song and peculiar structure of the nest of members of the genus, it is not unlikely that the anatomical characters will also be found to differ from those of the *Cisticolidae.*

(1) Tail much shorter than wing, usually less than 65 % and as low as 50 %; (2) first primary 20–33 % length of second; (3) tail broad and rather stiff; (4) beak strong, but narrow and sharply pointed; (5) inner toe distinctly longer than outer, its claw reaching beyond the base of middle claw; legs and feet usually very stout; (6) middle claw less than half the length of toe. Seasonal changes very marked. Inhabits open veld country; has a loud clear song, uttered by the male as it rises shywards; nest distinct from that of *Cisticola*, being a thin-walled, bag-shaped structure, composed of silky white fibres surrounded by broad green leaves of grass which are kept in place by the fibres and drawn together to a point at the entrance, which faces skywards.

Hemipteryx textrix (Vieillot).*

Plates—Levaillant's "Ois d'Afr.," Vol. III, Pl. 131; Smith's Ill. "Zool. of S.A.," Pl. 74, fig. 1.

The following description is taken from Smith's text to the above-mentioned plate, representing an adult ♂ in summer plumage:—

"The upper parts of the head and neck, together with the interscapulars, back and shoulders, umber-brown, variegated with white and clear yellowish brown; the colours constituting the variegations occur at the edges and tips of the feathers, which are either of the one or other of the light tints; in the feathers of the back they are mostly yellowish brown. The sides of the head and neck dirty yellowish brown, mottled with small umber-brown blotches. The primary and secondary quill-coverts umber-brown edged and tipped with pale wood-brown; primary and secondary quill feathers brownish red, the former edged faintly with pale wood-brown, the latter rather broadly with dirty greyish white. Chin and throat dirty greyish white, indistinctly mottled with light umber-brown; breast and anterior portion of belly pale sienna-yellow, distinctly mottled with oblong umber-brown spots nearly disposed in rows, middle and hinder portion of belly bluish white; flanks and vent pale yellowish brown, the former variegated with longitudinal umber-brown stripes. The two centre tail feathers brownish red, the rest umber brown, the whole edged with wood-brown, and the three outermost ones of each side broadly tipped with white. Bill, legs, and toes pale buff-orange, the upper mandible deepened from a shade of brown; claws of the same colour, rather brownish at the tips. Eyes reddish brown. Length 101, wing 47, tail 27, tarsus 23, middle toe 10 mm."

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* Nouv. Dict., XI, p. 208 (1817).

In winter the upper surface of head and body seems to be more clearly streaked, like other members of the genus. So far this species has only been recorded from the neighbourhood of Capetown and Swellendam, other species taking its place farther inland.

The Transvaal Museum collection contains only one specimen, bearing a label on which no locality nor date is given; but as the collector is stated to be R. H. Ivy, it was probably collected at Grahamstown, where that gentleman resides. It is slightly larger than measurements recorded of the species, giving:—wing 55, tail 34, tarsus 22, middle toe 11, culmen 10·5 mm. The top of the head and back of this specimen are streaked, and it is therefore probably in winter plumage.

Levaillant has represented this bird perched on a twig at the side of a nest of the Capoc-vogel (*Anthoscopus*); but I do not think that this was the result of his own imagination, as it seems more likely that he relied upon information received from natives. Who but a Bushman or Hottentot would have given such an imaginative description of the habits and flirtations of the pinc-pinc as we find related in the text to the figure? This explanation seems to be supported by the fact that the mouth of the nest is represented as pointing upwards.

The colouration of this species is so distinct that there has never been any question as to its identity; but there are a number of other species, two of which have been described from South Africa, two more require to be named and another has been described as a *Cisticola*. In general appearance the species are much alike, with the exception of *textrix*, and difficult to identify, small differences in colouration and measurements defining them.

Hemipteryx major, spec. nov.

Crown chestnut with indistinct paler streaks formed by the margins of the feathers being lighter coloured; hind neck paler than the crown; back more mottled, each feather being darker at its base and more or less margined with rufous-brown and whitish on the edges. Lower back and rump uniform red-brown, fading into buff at the tips of the lower plumes; upper tail-coverts dark brown with red-brown margins; tail feathers like the upper coverts, but broadly tipped with white. Primaries grey-brown, margined for the basal two-thirds with pale wood-brown; wing-coverts with somewhat paler edges than the primaries; inner secondaries darker than the primaries and more broadly margined with pale wood-brown. Lores and cheeks yellowish white, more or less mottled with black, the tips of the bristles and the base of the feathers in front of the eye being darker; ear-coverts and eyebrows more yellowish than the lores and darkening towards the nape; sides of the upper breast with large dark brown mottlings, forming a patch on each side; flanks fulvous, some of the feathers showing a very faint darker streak down the shaft; rest of under surface white tinged with fulvous; under wing-coverts and inner lining of wing isabelline.

The type bears a label which gives neither the date nor the locality when and where it was collected, but as it is said to have been taken by R. H. Ivy, I have no doubt that it was collected at Grahamstown. The following measurements have been taken of a series of skins in the Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	1st Prim.	Tail.	Tars.	Mid. Toe.	Culm.
1996	(Type) ?	?	♂	57	10	34	22	11	?
9533	Pretoria	23/10/11	♂	55·5	12	27	21	11	11
6997	,, ...	15/7/09	♂	56	10	36	21	10	11
5276	Honingspruit, O.F.S.	11/5/08	♀	54	10	36	21	10·5	11
5277	,, ,,	1/7/08	♂	57	9·5	38	21	10·5	11

The adult male collected at Pretoria on 23rd October is in a bad state of preservation; it is darker coloured than the type, probably on account of its fresh plumage. The three remaining specimens are in winter plumage.

In the collection there is an adult male in summer plumage from Marabastad that agrees with the type in general colouration, but is smaller, and I think belongs to another undescribed species. An adult female in summer plumage from Pretoria seems to be referable to this smaller species, but more material is required to establish their identity.

Hemipteryx egregia, spec. nov.

Crown and forehead straw colour, the sides and nape darker; hindneck like the nape; upper back and scapulars very dark brown, all the feathers more or less edged with pale rufous, almost white on the outer margins of the scapulars; lower back pale rufous; upper tail-coverts dark brown, with paler margins; tail feathers brown with paler margins and white tips. All the feathers of the upper surface worn on the margins. Lores, eyebrows, cheeks, ear-coverts and general under surface of body yellowish white, the ear-coverts rather more tawny and the flanks and thighs more rufous; base of feathers at the side of the breast brown; a blackish spot in front of the eye. Primaries grey brown, externally margined with pale wood-brown; inner secondaries dark brown margined all round with dull white; primary and greater wing-coverts like the primaries, remaining wing-coverts with paler margins. Iris yellowish brown; maxilla dark brown, mandible bluish white; legs and feet flesh pink. Length in the flesh 110 mm.

The type is an adult male in summer plumage procured at Wakkerstroom on 24th December, 1911, as it flew from an unfinished nest. Measurements of the skin are: wing 54, first primary 12, tail 34, tarsus 21·5, middle toe 11·5, culmen 11 mm.

An adult female skin collected at Belfast, Transvaal, on 11th January, 1909, may prove to be identical with this species; but it has much smaller feet and the crown is very dark brown, distinctly streaked with yellowish. It measures as follows: Length in the flesh 106 mm.; wing 50, first primary 12, tail 35, tarsus 18, middle toe 9·5, culmen 10 mm.

Two specimens collected in Natal may also be referable to this species, both of them being juvenile; but more material is required to verify their identity. They differ from the type in having the under surface more yellowish, and the cheeks and tips of the ear-coverts freckled with brown, and, like the specimen from Belfast, have the crown very dark brown, clearly streaked with tawny yellow. They measure as follows:—No. 9210, Dargle, 20/3/08, juvenile (♂), wing 52·5, first primary 15, tail 37, tarsus 21·5, middle toe 11, culmen 10 mm.; No. 6977, Red Hill, 29/4/10, ♂ (juvenile ?), wing 53, first primary 15, tail 35, tarsus 20 (?), middle toe 11, culmen 10 mm. Lengths of these two specimens taken in the flesh are 110 and 101 mm., respectively.

Hemipteryx ayresi (Hartlaub).*

Plate—Ibis, 1863, Pl. 8, fig. 2 (juv. ♀?).

This species was described as follows from specimens collected in Natal by Thos. Ayres:—"Similar to *Cisticola europeae* from Spain, but much brighter in colour, rump rufous, feet considerably larger and tarsi shorter. Length: bill 10, wing 27, tarsus 18, middle toe 13·5 mm. (♂). "Female.—Under surface creamy yellow, rump brighter foxy-red."

The coloured plate accompanying the description was taken from "a ♀ in which the yellowish abdominal tint is more strongly marked than it is in another female which Mr. Ayres also transmitted, and which closely resembles the ♂ bird." The figured specimen would seem to be the younger of the two ♀♀ mentioned, judging by analogy.

A fuller description was subsequently given by Hartlaub in "V. d. Decken's Reisen in Ost-Afr.," Vol. IV, p. 231, as follows:—"Top of head and remaining upper surface dark brown, each feather with rusty brownish margins, the upper surface giving a dark brown appearance with paler streaks; rump bright rusty red; wing quills dark brown, on the outer webs margined with rusty red, on the inner webs almost to the tips rusty yellow; wing-coverts dark brown, broadly edged with rusty brown; lores and a narrow eyebrow rusty white, as also the cheeks; remaining under surface rusty yellowish brown, brighter and darker on the flanks and thighs; chin and throat whitish; middle of breast and abdomen dirty white; tail feathers brownish black, edged on the outer web with rusty brown, and rusty yellowish white tips; the two middle tail feathers rusty brownish, black-brown along the shafts; tail feathers, viewed from below, dull black, with broad dirty white tips. Bill yellow-brownish horn, along the culmen brownish; legs and claws horn-yellow. Length 94, wing 45, tail 29, middle toe 11·5 mm." The species is ascribed in this case to the young of *C. cisticola*. Mr. Ayres' notes on the specimens show that the nest was that of an *Hemipteryx*, and this, coupled with the large feet, seem to indicate that the type of *Ayresi* should be placed in the genus *Hemipteryx*.

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* Ibis, 1863, p. 325.

Hemipteryx immaculata, Hartlaub.

"Above rufous-olivaceus, variegated with fuscous; back of head, back, and rump more rufous. Below spotless fulvous; throat and middle of abdomen whitish; tail feathers brownish black, with a terminal white spot. Inner margins of webs pale; under wing-coverts isabelline; feet and bill pale. Length 104, wing 47, tail 20, culmen 9 mm." This is the description of a species discovered by Dr. Hartlaub and described in the P.Z.S., 1866, p. 22. The type was procured by Capt. Bulger, in the Cradock District of the Cape Colony, and since then (probably on account of its having been placed in the synonymy of *C. terrestris*) the species has been lost sight of.

Hemipteryx minuta Gunning.*

"This bird is considerably smaller than *textrix*, is not streaked on the flanks and breast, and has a comparatively shorter tail.

"Description: Feathers of the upper surface blackish brown edged with pale brown, rustier on the wings, and on the wing and upper tail-coverts. Crown reddish brown, the bases of the feathers being darker, giving a mottled appearance. A short eyebrow, and the cheeks greyish cream, shading into pale rusty on the nape, forming an indistinct collar. Lores blackish. Under surface greyish white, the sides of the chest dusky-brown, the flanks fawny; under tail-coverts tawny-white. Tail blackish brown, the feathers (excepting the central pair) narrowly tipped with white. Thighs tawny rufous.

"Female: Length 89 mm., wing 49, tail 24, tarsus 20, culmen 9·5. Waterfalls, Haenertsburg, 5th February, 1908. (Iris tawny. Bill horn above, light brown below, tip darker. Tarsus ashy-yellow. F. V. Kirby.)"

In addition to the type from which the description was taken a ♂ is mentioned from Woodbush, which was collected on 29th January, 1908. Both these specimens (type and cotype) are in very worn condition, which is characteristic of these birds when taken during or just after the breeding season. The ♂ is very much paler on the crown and hindneck.

Since the discovery of this species, the Transvaal Museum collection has been considerably enriched by the addition of skins from Woodbush, Haenertsburg, Pretoria, Wakkerstroom, and Matatiele, from which the following diagnosis has been formulated:—

Male in early summer plumage (Wakkerstroom, October). Crown tawny brown, variegated on the nape and sides with dark brown and paler tawny; hindneck mottled with the same pattern as the crown, but paler; upper back and scapulars dark brown variegated with tawny-rufous and white; feathers of the lower back dark brown with very broad dark rufous margins, which all but hide the dark brown bases; rump lumes dark rufous; upper tail-coverts dark brown with broad rufous margins; middle tail feathers like the upper tail-coverts but with lighter tips and narrower margins; remaining tail feathers dark brown with broad, more or less white, tips. Lores, eyebrows, and side of head generally, creamy white, the cheeks freckled with fine dark brown markings; an obscure patch on each side of the breast brown, caused by the base of the feathers being of that colour and the lighter coloured tips somewhat hiding the brown; flanks dull fawn colour; the remaining under surface whitish, tinged with buff, the throat whiter and the middle of the body pure white, in contrast to the darker flanks.

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* Annals Transvaal Museum, 1909, p. 174.

As the season advances the forehead becomes paler and the hinder crown, the back and the patch on each side of the breast darker, as the result of wear.

Female in summer plumage (Woodbush and Haenertsburg, December). Forehead mottled tawny and tawny brown, becoming dark brown on the sides and hinder part of the crown and nape, which last are clearly streaked with tawny, in contrast to the forehead; the patch on each side of the breast hardly noticeable; under surface of body in general more fully tinged with fawn. The rest of the plumage is as in the adult males of the same season.

Young males before changing into the first winter plumage are like the adult females. Young females of the same age are like the adults in winter.

Winter plumage.—Both sexes alike, broadly streaked on the whole of the head and back, the colours otherwise remaining the same as in summer, or slightly duller.

Specimens in Transvaal Museum collection:—

No.	Locality.	Date.	Sex.	Wing.	Prim.	Tail.	Tars.	Mid. Toe.	Culm.
4599	Haenertsbg. (Type)	?	♀ (♂)	49	9	23?	19·5	9·5	9·5
5331	,, ,,	5/2/08	♀ (juv.)	45	12	29·5	17·5	9·5	9·5
7004	,, ,,	10/12/09	♂	50	9	25	19	10	10
7005	,, ,,	10/12/09	♀	46	10	27	18	9	9
4600	Woodbush (Cotype)	?	♂	50	8	22?	19·5	9·5	9·5
7003	,, ,,	12/12/09	♀	45	8	26	?	9·5	10
6999	Wakkerstroom	12/10/09	♂	50	7	25	18	10	9·5
7000	,, ,,	9/10/09	♂	50	7	27	19	9·5	10
7001	,, ,,	15/10/09	♂	51	7	26	19	10	10
7002	,, ,,	2/11/09	? (♂)	49	8	26	19	9	10
9184	,, ,,	26/12/11	♂	49·5?	7	25	19	9	10
9186	Matatiele..	19/11/11	? (♂)	50	9	27	19·5	10	?
8992	,, ..	31/5/11	♂	52	9	34	19	10	10
9684	,, ..	7/1/12	♂	52·5	9	27·5	18·5	9·5	10
9683	,, ..	5/2/12	♂ (juv.)	48·5	10	29	19	9	10
9682	,, ..	7/2/12	♀	45	8·5	26	18	9·5	10
9681	,, ..	8/2/12	♀	44	9	25	17·5	8·5	10
9680	,, ..	5/2/12	♂ (juv.)	49	13	30	17	9·5	10
9679	,, ..	7/2/12	♀ (juv.)	46	12	30	18	10	10
9678	,, ..	6/2/12	♂ (juv.)	49	12	29	18	10	10
9677	,, ..	6/2/12	? (♂juv.)	50	11	30	19	10	10·5
9675	Pretoria...	16/5/12	♂	51	9	33	19	9·5	10
5279	,, ...	30/1/09	? (♂juv.)	50	11	30	19	9·5	10

DESCRIPTIONS OF SOUTH AFRICAN MICRO-LEPIDOPTERA.

By E. Meyrick, B.A., F.R.S.

IV.

PTEROPHORIDAE.

Platyptilia corniculata, n. sp.

♀. 20 mm. Head and thorax white, partially tinged with pale brownish, face without distinct tuft, patagia sprinkled with brown posteriorly. Palpi $1\frac{2}{3}$, slender, white. Abdomen ochreous-whitish streaked with fuscous, two basal segments white. Forewings cleft to $\frac{2}{3}$, segments moderately broad, slightly dilated, apex pointed, termen oblique, of first segment concave, of second almost straight; whitish tinged with pale brownish, on dorsal half partially irrorated with brown; a white transverse streak angulated round cleft and thence proceeding obliquely outwards to costa and dorsum; both segments beyond this reddish-brown with a longitudinal median streak of dark reddish-fuscous suffusion, first segment crossed by an oblique white bar rather near termen: cilia white, on costa brownish between bars, at apex with a black projecting hook, on termen with a black basal line interrupted beneath apex of second segment, within cleft fuscous mixed with blackish scales, on dorsum with three faint pale brownish bars containing two or three blackish scales each, before tornus with a fuscous patch. Hindwings with segments moderate, pointed; fuscous; cilia light brownish, on basal third of dorsum mixed with white scales, with two or three dark fuscous points near base.

Three Sisters (Janse); in February, one specimen.

Pselnophorus catharotes Meyr.

Barberton (Janse); in December and January, four specimens. This species has only been recorded hitherto from the Khasia Hills in Assam, whence I have received a long series of fine specimens; with these the present examples agree entirely; the larval habits are unknown, but it is possible that the species has been artificially introduced into Africa.

Adaina periarga, n. sp.

♂ ♀. 15-16 mm. Head light yellowish-grey, forehead between antennae white. Palpi hardly over 1, white. Thorax yellowish-white. Abdomen whitish, with lateral row of small black dots. Forewings cleft from before $\frac{3}{5}$, segments narrow, acute; yellowish white, with some irregularly scattered black scales, costa white; a blackish dot in disc at $\frac{1}{3}$, and one at base of cleft; a blackish elongate mark on costa beyond cleft, a black elongate dot on costa beyond middle of first segment, one on lower margin of first segment beyond this, one almost at apex of each segment, and three on dorsum of second segment; cilia white, blackish on costal mark beyond cleft. Hindwing with segments very narrow, acute; whitish-grey; cilia whitish.

Barberton (Janse); in December, two specimens.

Marasmarcha tenax, n. sp.

♀. 16-17 mm. Head and thorax white closely irrorated with brown, posterior third of thorax ochreous-white. Palpi $1\frac{3}{4}$, white with dark fuscous lateral lines. Abdomen fuscous mixed with whitish, on sides suffused with dark fuscous, towards base yellowish-white. Forewings cleft from $\frac{3}{5}$, segments rather narrow, pointed, both segments with distinct lower angle and rather short termen; brown or fuscous, sprinkled with whitish and dark fuscous; costa suffused with dark fuscous throughout; dorsum paler and more whitish-suffused towards base; a cloudy roundish dark fuscous spot towards dorsum before $\frac{1}{3}$, one in disc obliquely beyond this, and two rather elongate transversely placed before cleft; cilia light fuscous, on termen of both segments with interrupted blackish median line, on dorsum with several minute groups of black scales. Hindwings rather dark fuscous; cilia light fuscous.

Barberton (Janse); in December, two specimens.

Pterophorus purus, n. sp.

♀. 19 mm. Head whitish-yellow, fillet between antennae white, face tinged with brownish. Palpi $1\frac{1}{3}$, slender, white. Antennae yellow-whitish. Thorax white, posterior half whitish-yellow. Abdomen whitish-yellow. Forewings cleft to near middle, segments moderate, acute, second somewhat narrower; whitish-yellow; costal edge white throughout; a minute blackish dot on costa of first segment beyond its middle, and one on its lower margin beyond this; a short dark fuscous line along lower margin of second segment towards apex, shaded with grey above; cilia white. Hindwings with segments slender, pointed; pale grey; cilia white.

Barberton (Janse); in December, one specimen.

Pterophorus timidus Meyr.

♂ ♀. 19–20 mm. In one ♂ there is a distinct blackish elongate dot in disc of forewings at $\frac{1}{3}$, but this is usually obsolete; marginal dots on 2, 3, and 7 sometimes minute, black; cilia whitish-ochreous.

Pterophorus callidus, n. sp.

♂. 14–15 mm. Head light brown, antennae connected by a white line. Palpi $1\frac{1}{4}$, white, with a black lateral line. Thorax ochreous-whitish. Abdomen ochreous-whitish, with a dark fuscous dorsal line. Forewings cleft from before $\frac{3}{5}$, segments pointed, first rather narrow, second narrower, acute; ochreous-white, slightly tinged with brownish towards base of dorsum, and towards costa beyond cleft; costal edge dark fuscous from base to beyond cleft; a blackish dot in disc at $\frac{1}{3}$, and one just before lower angle of cleft; a short black mark on costa beyond cleft; black dots at extremities of veins 2, 3, 4, 7, 8, and 10; cilia fuscous, on costa ochreous-whitish. Hindwings dark grey; cilia ochreous-grey.

Barberton (Janse); in January, two specimens.

Pterophorus laqueatus, n. sp.

♀. 18–20 mm. Head brownish, antennae connected by a white bar. Palpi $1\frac{1}{2}$, ascending, appressed to face, white, with dark fuscous lateral line. Thorax white, posteriorly faintly ochreous-tinged. Abdomen white, with faint whitish-ochreous dorsal line, sometimes marked with several fuscous dots. Forewings cleft from $\frac{3}{5}$, segments acute, first moderate, second rather narrower; white, veins on costal half suffused with pale brownish; a blackish subdorsal streak towards base, dorsum beneath this suffused with pale brownish; a pale brownish very oblique streak running from dorsum before middle to costa beyond cleft, passing close before cleft, irregularly irrorated with dark fuscous, and marked with a blackish dash in disc, a blackish spot beneath costa, and a blackish elongate mark on costa; a dark fuscous patch occupying nearly apical half of second segment except apical part of upper margin; black dots on extremities of veins 3, 7, 9, 10, 11; cilia whitish, on costa dark fuscous on blackish mark and brownish towards middle of first segment, and with fuscous patches towards apex of first segment beneath and of second segment on both margins, on basal portion of cleft, and beneath basal portion of second segment. Hindwings grey, with dark fuscous dots at apex of segments; cilia light grey.

Barberton and Three Sisters (Janse); in December and March, two specimens. Also one in South African Museum from Mfongosi, Zululand, in May (W. E. Jones).

ORNEODIDAE.

Orneodes acalyptra, n. sp.

♂ ♀. 14-15 mm. Head and thorax blackish sprinkled or mixed with white, thorax with a white postmedian bar. Palpi very long, porrected, second joint long, densely scaled, blackish irrorated with whitish, terminal joints $\frac{1}{3}$ of second, stout, pointed, black, base and apex white. Abdomen blackish irrorated with whitish, segmental margins white, basal segment with a semicircular white streak. Forewings grey closely irrorated with black; three white dots on basal third of costa, and five semioval white spots on posterior $\frac{2}{3}$, enclosing dark costal dots; segments 2–6 crossed between $\frac{1}{3}$ and apex by four series of fine white marks, last series limiting small black apical spots; cilia dark grey, on white marks with outwardly oblique fine whitish bars, at apex with black antemedian line edged with whitish on each side. Hindwings throughout as segments 2–6 of forewings, but first series of white marks broader, cilia between segments 1–4 pale greyish from base to second series of marks.

Barberton (Janse); in January, two specimens.

Microschismus premnias, n. sp.

♂ ♀. 16-17 mm. Head and thorax brownish-ochreous mixed with white and sprinkled with fuscous. Palpi 8, brownish-ochreous sprinkled with dark fuscous and whitish. Antennae in ♂ flatly dentate, evenly ciliated (1). Abdomen fuscous, segmental margins whitish. Forewings brownish-ochreous irrorated with dark fuscous; costa dotted with white; a fascia of dark fuscous suffusion crossing wing beyond middle parallel to termen, edged outwardly by a cloudy whitish line; four series of white marks crossing wing between this and termen, first curved, others nearly straight; cilia brownish-ochreous irrorated with dark fuscous, with indistinct slender whitish bars on white markings. Hindwings pale grey irrorated with dark fuscous; four transverse series of white marks on posterior half of wing, less distinct in ♂; cilia grey, obscurely whitish on white marks.

Three Sisters (Janse), in March, one ♀; also one ♂ from Pinetown, Natal, in my collection.

PHALONIADAE.

Pharmacis feriata, n. sp.

♂. 15 mm. Head and thorax whitish, partly tinged with pale yellowish. Palpi yellow-whitish sprinkled with grey. Abdomen yellow-whitish. Forewings elongate, rather narrow, costa slightly arched, apex obtuse-pointed, termen straight, oblique; silvery-white, irregularly strewn with spots and blotches of pale yellowish suffusion, with an angulated subterminal transverse streak of yellowish suffusion, and a similar streak along termen; costa strigulated and towards base suffused with grey; a black dot in disc at $\frac{2}{3}$: cilia white, with a median line of scattered black points. Hindwings grey, paler towards base; cilia whitish, with a faint grey line.

Barberton (Janse); in December, one specimen.

Pharmacis replicata, n. sp.

♂. 12 mm. Head and thorax whitish, shoulders mixed with brown. Palpi $2\frac{1}{2}$, whitish, second joint tinged with brownish-ochreous. Antennal ciliations $1\frac{1}{2}$. Abdomen whitish fuscous. Forewings elongate, costa gently arched, with moderate costal fold reaching from base to $\frac{1}{3}$, apex obtuse-pointed, termen straight, oblique; whitish, partially tinged with pale yellowish; a patch of yellow-ochreous suffusion mixed with grey extending along costa from base to near middle, costal fold suffused with dark grey; some grey irroration towards costa posteriorly; an elongate patch of ferruginous-ochreous suffusion beneath middle of disc, sprinkled with grey, with two small slightly raised silver-grey spots before and beyond middle of disc marking its extremities, and a third on its lower margin; a blackish discal dot beyond this, beneath which is some grey suffusion connecting discal patch with an undefined tornal patch of ferruginous ochreous suffusion: cilia whitish irrorated with dark grey, with an irregular interrupted row of black scales towards base. Hindwings light grey; cilia whitish-grey, with grey subbasal line.

Haenertsburg (Swierstra); in December, one specimen. The costal fold is an unusual character in this genus; in this family generally it may be regarded as a primitive or reversional structure.

TORTRICIDAE.

Tortrix pharetrata, Meyr.

♂ ♀. 16–18 mm. Forewings with lines of scales on veins almost or wholly obsolete, except a short well-marked oblique dark streak terminating on costa near apex. Hindwings grey-whitish or pale grey. Palpi in ♂ $2\frac{1}{4}$, in ♀ $2\frac{1}{2}$.

Pretoria, in February and May (Miss S. Viljoen, Janse); Middelburg, in October (Janse).

EUCOSMIDAE.

Eucosma spiculifera, n. sp.

♂. 13-14 mm. Head, palpi, and thorax ochreous-whitish or pale greyish-ochreous, crown and thorax sometimes with a central stripe of dark grey suffusion. Abdomen grey. Forewings elongate, posteriorly dilated, costa gently arched, without fold, apex obtuse, termen sinuate, nearly vertical; whitish-ochreous, or greyish-ochreous irrorated with whitish points, with scattered blackish and fuscous scales tending to form longitudinal lines between veins; costa with oblique dark fuscous strigulae; dorsal area more or less suffused with fuscous, with an ochreous-brown spot before tornus: cilia greyish-ochreous sprinkled with whitish, on upper part of termen more or less suffused with blackish. Hindwings with 3 and 4 stalked; grey, thinly scaled, with bright violet-blue reflections; veins marked with suffused black streaks; cilia ochreous-grey-whitish, with indistinct grey subbasal shade. Under surface of forewings suffused with blackish except towards margins.

Barberton (Janse), in January and February, two specimens; also two in my own collection from Pinetown, Natal (Leigh). Conspicuous by the peculiar hindwings, but very possibly the ♀ may not share this character, nor the blackish suffusion of the under surface of forewings.

Eucosma salticola, n. sp.

♂ ♀. 10-12 mm. Head and thorax ochreous-grey, brownish-ochreous, greyish-ochreous, or pale yellow-ochreous, face usually more whitish. Palpi whitish, with two or three spots of grey suffusion. Abdomen grey. Forewings elongate, posteriorly slightly dilated, costa gently arched, without fold, apex obtuse, termen faintly sinuate, rather oblique; bronzy-grey; posterior $\frac{2}{3}$ of costa dark fuscous obliquely strigulated with white; two approximated thick purplish-leaden striae from costa before middle to middle of dorsum, acutely angulated in middle; beyond these an oblique blackish streak from costa to disc; an oblique purplish-leaden striga from costa beyond middle, meeting in disc an erect leaden-metallic streak from tornus limiting ocellus anteriorly; ocellus narrow, sometimes mixed with whitish-ochreous, edged posteriorly with silvery-metallic, and including three interrupted or broken fine black lines; sometimes (in two specimens) a narrow clear white slightly curved longitudinal streak from base through disc to middle of anterior margin of ocellus, or (in two ♀♀) a broader yellow-ochreous streak similarly placed, in one of the latter there is a sharply marked subtriangular ochreous-white median dorsal blotch: cilia grey irrorated with white, with a blackish basal line. Hindwings with 3 and 4 connate; grey, thinly scaled in disc and towards base; veins, termen, and apical area suffused with dark grey; cilia whitish-grey, with grey basal line.

Barberton, Three Sisters, Waterval Onder (Janse); from November to March, twelve specimens. The variability is remarkable, and the longitudinal pale streaks are a singular form of variation, but I have no doubt of the specific identity of the various forms.

Eucosma calculosa, n. sp.

♂ ♀. 8-11 mm. Head ochreous-whitish or pale greyish-ochreous. Palpi shortly rough-scaled, ochreous-whitish, indistinctly spotted with grey irroration. Thorax light-greyish-ochreous irrorated with fuscous. Abdomen grey. Forewings elongate, slightly dilated posteriorly, costa slightly arched, without fold, apex obtuse, termen slightly sinuate beneath apex, little oblique; rather dark fuscous suffusedly irrorated with ochreous-whitish; costa dark fuscous marked with pairs of oblique whitish strigulae, on posterior half giving rise to violet-leaden oblique streaks, between which are slender blackish-fuscous streaks from costa beyond middle and at $\frac{3}{4}$; ocellus edged anteriorly broadly with violet-leaden, posteriorly with a silvery-metallic streak preceded by three black dots, its lower extremity ochreous-whitish; cilia grey irrorated or suffused with ochreous-whitish, especially towards tornus, with rows of dark fuscous points. Hindwings with 3 and 4 stalked; light violet-grey, thinly scaled and subhyaline in disc, suffused with dark fuscous on veins and towards termen; cilia light grey, with dark grey subbasal line.

Barberton, Three Sisters (Janse), in January and February, three specimens; also one in my collection from Port Louis, Mauritius, in May.

Eucosma sollennis, n. sp.

♀. 13 mm. Head, palpi, and thorax rosy-grey. Abdomen grey. Forewings elongate, posteriorly slightly dilated, costa gently arched, apex obtuse, termen sinuate, somewhat oblique; dull light greyish-rosy; costa strigulated with dark grey; basal patch grey, somewhat blackish-strigulated, edge somewhat oblique, slightly rounded, quite even; central fascia indicated by faint grey suffusion except on dorsum, where it forms a triangular dark grey spot before tornus; a small blackish apical spot, and an upwards-oblique blackish mark from middle of termen, their angles touching: cilia dark grey sprinkled with whitish, base pale flesh colour. Hindwings with 3 and 4 stalked; grey, suffused with darker on veins and towards termen; cilia pale grey, with dark grey subbasal shade.

Barberton (Janse); in December, one specimen.

Eucosma chloroterma, n. sp.

♂. 12 mm. Head, palpi, and thorax dark fuscous, sides of crown greyish, thorax slightly sprinkled with whitish. Abdomen rather dark grey. Forewings elongate, posteriorly slightly dilated, costa gently arched, without fold, apex obtuse, termen almost straight, oblique; dark fuscous, finely sprinkled with whitish; costa between $\frac{1}{4}$ and $\frac{2}{3}$ with very fine whitish strigulae; ocellus obscurely edged with leaden-metallic, posterior edge paler and silvery, within it are three very fine black dashes; a slender pale ochreous-brownish terminal fascia, widest at apex, where it is margined anteriorly by a white costal strigula: cilia dark leaden-fuscous, slightly whitish-sprinkled, with dark fuscous basal line. Hindwings with 3 and 4 connate; rather dark grey; cilia pale greyish, with dark grey subbasal line.

Pretoria (Swierstra); in November, one specimen.

Eucosma inscita, n. sp.

♂ ♀. 13-14 mm. Head and thorax grey, partly suffused with dark violet-grey. Palpi grey, second joint expanded with dense scales, terminal joint and apex of second blackish-grey. Abdomen dark grey. Forewings elongate, slightly dilated posteriorly, costa gently arched, without fold, apex obtuse, termen sinuate, somewhat oblique; grey or dark grey, suffusedly mixed with leaden-metallic and blackish; costa blackish, marked with pairs of obscure pale strigulae; an obscure rounded-quadrate patch of whitish suffusion on middle of dorsum, transversely strigulated with ground colour; ocellus margined laterally with leaden-metallic streaks; terminal edge whitish in sinuation: cilia dark grey sprinkled with whitish, with blackish grey subbasal line. Hindwings with 3 and 4 connate; grey, darker posteriorly; cilia light grey, with darker subbasal line.

Barberton, Middelburg (Janse); in October, December, and January, three specimens.

Eucosma rufescens, n. sp.

♂ ♀. 14-16 mm. Head pale brown-reddish, face whitish. Palpi ascending, shortly rough-scaled, white. Antennae in ♂ simple. Thorax red-brownish, shoulders suffused with whitish. Abdomen light greyish. Forewings elongate, posteriorly slightly dilated, costa slightly arched, without fold, apex obtuse, termen slightly sinuate, somewhat oblique; light brown-reddish sprinkled with fuscous; anterior half of costa rather broadly suffused with ochreous-whitish, posterior half obliquely strigulated with whitish: cilia whitish-brown-reddish, with darker basal line. Hindwings with 3 and 4 stalked; whitish-ochreous tinged or in ♀ sometimes suffused with grey; cilia whitish-ochreous tinged with grey.

Three Sisters, Barberton (Janse); from January to March, three specimens.

Eucosma passiva, n. sp.

♂. 15-17 mm. Head and thorax ochreous-white, shoulders tinged with brownish. Palpi whitish, second joint externally irrorated with light fuscous, with two faint darker bars. Antennae simple. Abdomen light grey, anal tuft whitish. Forewings elongate, costa slightly arched, without fold, apex obtuse, termen sinuate, rather oblique; whitish-ochreous suffusedly mixed with white; costa marked with white strigulae separated by blackish irroration; a rather broad median streak of greyish-ochreous or grey suffusion from base to $\frac{2}{5}$, strigulated with blackish, representing basal patch; discal area between this and termen suffused with light greyish; a dot or some scattered blackish scales on end of cell; ocellus edged with silvery-metallic, with two longitudinal black marks; some black scales on termen; cilia white, on termen mixed with grey. Hindwings with 3 and 4 stalked; pale grey, somewhat darker towards apex; cilia whitish-grey.

Pretoria (Burger, Janse); in February and March, two specimens.

Eucosma amara, n. sp.

♀. 14-16 mm. Head, palpi, and thorax dark purplish-grey, palpi densely tufted. Abdomen grey. Forewings elongate, costa gently arched, apex obtuse, termen sinuate, rather oblique; rather dark leaden-grey sprinkled with blackish scales tending to form strigulae, and beyond cell forming indistinct lines on veins; costa strigulated with blackish, on posterior half with pairs of obscure whitish strigulae whence rise very oblique blue-leaden strigae, second running to termen above middle ocellus margined by leaden-metallic streaks, posterior preceded by three round black dots; cilia grey mixed with dark fuscous and sprinkled with whitish. Hindwings with 3 and 4 connate; rather dark grey; cilia grey, with darker subbasal shade.

Barberton (Janse); in December and January, three specimens.

Eucosma accipitrina, n. sp.

♂. 15 mm. Head pale brownish, face whitish. Palpi brown-whitish, sprinkled with grey. Thorax whitish, shoulders and anterior margin brown. Abdomen grey, anal tuft whitish. Forewings elongate, costa moderately arched, without fold, apex obtuse-pointed, termen rather strongly sinuate beneath apex, little oblique; light olive-brownish, sprinkled with blackish; basal patch strigulated with blackish and towards dorsum with whitish, outer edge nearly straight, oblique, separated from central fascia by a band of four white striae; upper half of central fascia suffused with blackish, posterior edge strongly angulated beneath costa, edged with a leaden-metallic stria, lower half hardly defined; costa posteriorly blackish with pairs of oblique whitish strigulae, terminated by short leaden-metallic marks; ocellus edged laterally with leaden-metallic, crossed by a strong black mark above its middle and two slighter and less defined beneath, and closed above by an elongate blackish spot, convex above: cilia pale brownish with leaden-metallic reflections, round apex mixed with dark fuscous. Hindwings with 3 and 4 stalked; rather dark fuscous; cilia greyish, with darker subbasal shade.

Barberton (Janse); in January, one specimen.

Eucosma actuosa, n. sp.

♂ ♀. 13-14 mm. Head white, in ♀ mixed with fuscous and dark fuscous. Palpi white mixed with dark fuscous. Thorax white with a transverse posterior bar of dark fuscous irroration, and sprinkled in ♂ slightly, in ♀ more strongly with fuscous and dark fuscous. Abdomen grey. Forewings elongate, moderate, costa gently arched, in ♂ without fold, apex obtuse, termen almost straight, rather oblique; fuscous mixed with blackish-grey; costa strigulated with black and white; basal patch strigulated with blackish-grey and whitish except towards outer edge, which is obtusely angulated in middle; space between this and central fascia, except towards costa, suffused with whitish and strigulated with blackish-grey; central fascia narrow, irregular, oblique, posterior edge well marked, with projection in middle, crossed by an irregular streak of blackish-grey suffusion extended posteriorly towards apex, above which is some whitish suffusion beneath costa; ocellus white, edged with silvery-metallic, and crossed by three black dashes: cilia white, indistinctly barred with blackish-grey irroration. Hindwings with 3 and 4 stalked; rather dark grey; cilia white mixed with grey, with grey subbasal line.

Barberton (Miss Williams, Janse); in January, five specimens.

Eucosma clarifica, n. sp.

♂ ♀. 11-13 mm. Head white. Palpi white, second joint light fuscous except apex and projecting hairs. Antennae in ♂ simple. Thorax white, with two faint pale fuscous transverse bars, shoulders fuscous. Abdomen whitish-grey, anal tuft white. Forewings elongate, costa slightly arched, without fold, apex obtuse, termen sinuate, rather oblique; white, with a few faint grey strigulae in disc; costa marked with small dark fuscous spots and strigulae; basal patch strigulated with grey, outer edge almost straight, vertical, hardly prominent below middle, where it is marked with a black dot; central fascia somewhat oblique, formed of irregular brownish-ochreous and some light grey marks, and preceded by irregular light grey suffusion, towards dorsum with two or three minute black dots; immediately beyond this is a pale grey transverse blotch in disc; ocellus edged with silvery-metallic and containing two black dots, surmounted by some dark grey irroration, above which is a small fine black dash; three strigulae from costa posteriorly, a small spot at apex, and a mark on middle of termen brownish-ochreous: cilia white, on termen with basal half mixed with blackish, round apex with outer half also mixed with blackish except tips, which are ochreous-brown. Hindwings with 3 and 4 stalked; whitish-grey; cilia white, with grey subbasal line, towards apex with pale grey subapical line.

Pretoria (Swierstra, Janse); in November and December, three specimens. Closely similar to *calliarma* and *marmara*.

Eucosma paracremna, n. sp.

♀. 18 mm. Head and thorax grey mixed with dark grey and irrorated with whitish. Palpi densely tufted, grey, second joint spotted with blackish suffusion. Abdomen grey. Forewings elongate, costa gently arched, apex obtuse, termen hardly sinuate, somewhat oblique; grey mixed with dark fuscous, suffusedly irrorated with whitish, the dark ground colour appearing to form transverse strigulation; costa marked with oblique dark fuscous strigulae; outer edge of basal patch angulated and with a projection in middle, upper half marked by a blackish stria, lower half by a transverse blackish spot; a dark grey triangular praetornal spot not reaching half across wing, upper part marked with one or two black dashes; ocellus narrow, margined laterally with silvery-metallic streaks, with one or two short black dashes in upper part, also two or three others above it; a small costal spot of blackish suffusion, preceded on costa by a white mark: cilia grey irrorated with white, on apex and upper part of termen irrorated with blackish. Hindwings with 3 and 4 long-stalked; dark grey; cilia grey irrorated with whitish.

Three Sisters (Janse); in March, one specimen.

Bactra stagnicolana Zell. (= *siccella* Walk.).

After examining very carefully about fifty specimens from various sources and localities, I conclude they are all one species, to which Zeller's name is applicable. Very variable in colour and intensity, hindwings varying from grey to white in both sexes (though usually grey in ♂, whitish in ♀); a longitudinal stripe is often present in forewings, but not a transverse fascia; structure constant, though shape of forewings varies very slightly.

Polychrosis metachlora, n. sp.

♂. 15-17 mm. Head and thorax dark fuscous mixed or spotted with pale greyish-ochreous. Palpi pale ochreous sprinkled and spotted with dark fuscous. Antennal ciliations $\frac{1}{3}$. Abdomen grey. Forewings elongate, moderate, posteriorly dilated, costa gently arched, apex rounded-obtuse, termen obliquely rounded ; dark fuscous, strigulated with blackish, with very irregular thick dark violet-leaden-metallic transverse striae, towards dorsum somewhat strigulated with pale greyish-ochreous ; terminal area beyond a slightly outwards-curved line from $\frac{2}{3}$ of costa to dorsum before tornus whitish-ochreous, marked with some blackish strigulae towards middle of disc and three small spots of dark fuscous irroration on costa ; cilia whitish-ochreous, with two more or less marked interrupted dark fuscous lines round apical area. Hindwings fuscous ; cilia whitish-ochreous, with fuscous subbasal line.

Pretoria (Swierstra), Barberton (Janse) ; in December, two specimens.

Cosmorrhyncha, n. g.

Antennae in ♂ shortly ciliated. Palpi long, porrected, second joint triangularly smooth-scaled, terminal joint rather long, curved, pointed. Thorax without crest. Forewings with 3 from angle, 7 separate, to termen. Hindwings with basal pecten ; 3 and 4 connate, 5 closely approximated at base, 6 and 7 closely approximated towards base.

Type *ocellata* Mabille. Forewings in ♂ without costal fold, hindwings with thickened dorsal lobe. I formerly referred this species (under the name of *acrocosma* Meyr.) to *Eccopsis* Zell., which genus I have since merged in *Argyroploce*, but it is a curious type, and deserves generic separation on the ground of the peculiar palpi. It was originally described from Madagascar, which is probably its home.

Argyroploce leucotreta, n. sp.

♀. 19–20 mm. Head dark grey on crown, face blackish surrounded with pale reddish-grey. Palpi porrected, dark fuscous, terminal joint rosy-whitish irrorated with dark fuscous. Thorax grey tinged with rosy and suffused with blackish irroration, apex of patagia pale, crest large. Abdomen dark grey. Forewings elongate-triangular, costa slightly arched, apex rounded-obtuse, termen rounded, rather oblique ; dark brown irregularly suffused with dark violet-leaden-metallic, with irregularly scattered black strigulae ; posterior half of costa with small blackish-fuscous spots separated by pairs of whitish strigulae ; a snow-white dot in disc at $\frac{2}{3}$; ocellus small, edged with leaden-metallic lateral streaks touched internally with whitish and then partially finely edged with black, with two longitudinal black marks ; four small confluent dark fuscous black-edged spots forming an outwardly convex semicircle towards apex, partially edged with rosy-whitish ; a thick leaden-metallic streak runs round this ; termen with several upwards-oblique whitish strigulae ; cilia dark leaden-fuscous. Hindwings with 3 and 4 short-stalked ; dark fuscous ; cilia grey, with dark fuscous subbasal line.

Pretoria (Swierstra), in May, one specimen ; also one in my own collection from Durban, Natal, in October (Leigh).

Argyroploce carceraria, n. sp.

♂. 15 mm. Head and thorax dark fuscous tinged with brown and grey, and sprinkled with whitish. Palpi porrected, dark fuscous. Abdomen dark grey. Forewings elongate, rather dilated posteriorly, costa gently arched, apex obtuse, termen almost straight, rather oblique ; dark fuscous crossed by irregularly confluent bluish-leaden striae somewhat mixed with whitish, and rising from pairs of whitish strigulae on costa ; outer edge of basal patch indistinctly indicated, angulated in middle ; central fascia dark fuscous, very broad above middle, thence strongly narrowed on costa, and attenuated downwards to a point on dorsum beyond middle, anterior edge nearly straight, posterior strongly convex ; ocellus oblique, parallel to termen, rather dark fuscous crossed by three thick black bars, edged anteriorly with white and posteriorly with blue-leaden followed by ferruginous on termen, its upper margin marked with leaden, above which are two other black bars : cilia leaden mixed with dark fuscous and sprinkled with whitish. Hindwings with 3 and 4 connate ; rather dark fuscous ; cilia grey with dark fuscous subbasal line.

Waterval Onder (Janse) ; in November, two specimens.

Argyroploce sagata, n. sp.

♂ ♀. 10-12 mm. Head whitish, in ♂ hardly, in ♀ more strongly suffused with light red-brownish and mixed with grey. Thorax reddish-brown mixed with blackish and sprinkled with white, in ♂ largely suffused with white. Abdomen grey, anal tuft in ♂ whitish. Forewings elongate, posteriorly dilated, costa slightly arched, apex obtuse, termen straight, somewhat oblique ; brown, in ♂ tinged with reddish, mixed and transversely streaked with bluish-leaden-metallic, with some scattered blackish scales ; costa with pairs of white strigulae ; basal patch mixed with white on costal half, outer edge angulated below middle, marked with blackish and edged with a white stria ; central fascia represented by a costal patch of blackish suffusion edged posteriorly in disc with whitish, on dorsal half only by some scattered black strigulae ; an irregular whitish subterminal stria, and some whitish strigulae on termen ; some blackish strigulation towards apex : cilia brownish mixed with grey and sprinkled with whitish, towards base spotted with blackish, round apex suffused with dark fuscous. Hindwings with 3 and 4 stalked ; rather dark grey, thinly scaled in disc ; cilia whitish-grey, with grey subbasal shade. Hindwings on undersurface in ♂ sprinkled with black specks on dorsal area.

Three Sisters (Janse) ; in March, two specimens.

Argyroploce prodroma, n. sp.

♂ ♀. 11-13 mm. Head and thorax dark bluish-fuscous, patagia and crest slightly sprinkled with whitish. Palpi porrected, pale ochreous spotted with dark fuscous suffusion or wholly dark fuscous. Antennae in ♂ simple. Abdomen fuscous, anal tuft pale greyish. Forewings moderate, posteriorly somewhat dilated, costa gently arched, apex rounded-obtuse, termen hardly rounded, rather oblique ; olive-ochreous or pale yellow-ochreous, sometimes partially sprinkled or almost wholly suffused with dark fuscous ; basal patch blackish mixed with dark bluish-leaden, metallic, edge obtusely angulated above middle, but the blackish suffusion tending to unite with blackish costal extremity of central fascia, so as to form a conical projection extending along costa to $\frac{2}{3}$; two pale silvery-iridescent striae beyond basal patch, mostly bluish-leaden-metallic on upper portion ; central fascia moderate, very undefined, somewhat oblique, variably marked or mixed with ferruginous or dark fuscous, costal extremity blackish; ocellus narrow, enclosed by bluish-leaden-metallic or silvery-iridescent irregular streaks, anterior extended to costa, and a similar streak runs from costa beyond this to termen above middle; apical area usually more or less tinged or suffused with ferruginous, with two blue-leaden dots on costa before apex and one beneath apex: cilia dark bluish-grey, with blackish subbasal line. Hindwings rather dark fuscous; cilia pale bluish-fuscous, with fuscous subbasal shade.

Barberton, Three Sisters (Miss Williams, Janse); from September to March, seven specimens. Very variable, no two being alike, owing to difference of colour and development of dark suffusion.

Argyroploce nucleata, n. sp.

♀. 14 mm. Head and thorax white-brownish, thoracic crest and a transverse median bar reddish-brown. Palpi porrected, white-brownish sprinkled with reddish fuscous. Abdomen grey, segmental margins mixed with whitish. Forewings elongate, posteriorly dilated, costa gently arched, apex obtuse, termen straight, rather oblique; whitish-ochreous with silvery iridescence, strigulated with deep brown-reddish suffused with ochreous-brown, with a few scattered black scales, dorsum strigulated with black; a triangular brownish blotch mixed with reddish on middle of costa, reaching half across wing, marked on costa with two triangular red-brown spots, its apex with some black scales and followed in disc by a whitish spot, beneath which are also some black scales; two small triangular red-brown spots on costa posteriorly; a triangular red-brown blotch mixed with black resting on upper $\frac{2}{3}$ of termen: cilia brownish somewhat sprinkled with whitish, basal third reddish-brown, outer $\frac{2}{3}$ indistinctly barred with blackish, on tornus suffused with whitish. Hindwings with 3 and 4 connate; grey, darker towards apex and termen; cilia grey-whitish, with grey subbasal line.

Three Sisters (Janse); in March, one specimen.

Laspeyresia leptogramma, n. sp.

♂ ♀. 9-10 mm. Head and thorax ochreous-whitish tinged with brownish, face and palpi white. Abdomen grey, apex ochreous-whitish. Forewings elongate, posteriorly slightly dilated, costa gently arched, apex obtuse, termen sinuate, little oblique; fuscous; basal third suffused with ochreous-whitish; rest of costa with seven pairs of oblique whitish strigulae, irrorated with dark fuscous between these, costal third beneath these suffused with light ochreous, first two pairs extended $\frac{1}{3}$ across wing, third giving rise to a blue-leaden-metallic stria obtusely angulated above middle and running to tornus, indented or interrupted below middle; three longitudinal ochreous-white striae in median area of disc, and four very oblique parallel ochreous-white striae from median third of dorsum, all terminated by the postmedian stria, praetornal area also striated longitudinally with ochreous-whitish; ocellus narrow, reaching $\frac{2}{3}$ across wing, grey irrorated with whitish, marked with six short black lines, margined anteriorly with ochreous, posteriorly by a silvery-metallic streak, and above by a blue-leaden-metallic stria running from fifth pair of costal strigulae to termen beneath apex: cilia grey-whitish, basal area irrorated with dark grey. Hindwings rather dark grey; cilia whitish, with grey subbasal shade.

Barberton (Janse); in January, two specimens.

Laspeyresia anthracotis, n. sp.

♂. 13 mm. Head, palpi, and thorax pale greyish-ochreous irrorated with grey. Abdomen grey-whitish, anal tuft mixed with blackish. Forewings elongate, moderate, posteriorly slightly dilated, costa gently arched, apex obtuse, termen sinuate-indented beneath apex, somewhat oblique; light greyish-ochreous suffusedly irrorated with grey; costa suffused with grey and strigulated with dark fuscous, on posterior half with oblique fuscous strigae rising from these; posterior edge of ocellus marked by a silvery-metallic streak preceded by two black dots. Hindwings with 3 and 4 stalked; grey; dorsal area expanded, covered by a light bluish-grey patch suffusedly irrorated with black; lower margin of cell and veins 2 and 3 with lines of scattered black scales; cilia pale grey, with dark grey subbasal line. Forewings on under surface with costal half suffusedly irrorated with blackish. Hindwings on under surface with anterior half of costal area irrorated with black; dorsal area with a large blackish patch, dorsal edge with a blackish hair pencil.

Middelburg (Janse); in October, one specimen. Allied to the following species, but certainly distinct by different form of forewings.

Laspeyresia choleropa, n. sp.

♂. 14 mm. Head and thorax whitish-fuscous. Palpi whitish. Abdomen grey-whitish, on basal half mixed with blackish. Forewings moderate, costa gently arched, apex obtuse, termen rounded, somewhat oblique; whitish-fuscous; costa narrowly blackish, marked with pairs of oblique pale leaden strigulae, costal area beneath this on anterior half wholly pale leaden-grey sprinkled with black, on posterior half suffused with fuscous, crossed by oblique pale leaden strigae, with some black scales between these; posterior edge of ocellus marked by a silvery-metallic streak preceded by three black dots. Hindwings with 3 and 4 stalked; violet-grey, dorsal area expanded and tinged with violet-whitish; cilia light violet-grey, with dark grey subbasal line. Forewings on under surface with costal area suffused with blackish. Hindwings on under surface with anterior $\frac{2}{3}$ of costal area mixed with blackish and grey-whitish, dorsal area sprinkled with blackish.

Barberton (Janse); in January, one specimen. Not in good condition, but the sexual characters should ensure identification.

Laspeyresia psamminitis, n. sp.

♂ ♀. 15-16 mm. Head light fulvous-ochreous. Palpi pale ochreous. Thorax pale ochreous or whitish-ochreous, irrorated with grey. Abdomen light grey, anal tuft whitish-ochreous. Forewings elongate, rather dilated posteriorly, costa slightly arched, apex obtuse, termen sinuate, somewhat oblique; grey, closely and suffusedly irrorated with whitish-ochreous or pale ochreous; costa with some strigulae of dark grey irroration; posterior $\frac{3}{5}$ of costal area suffused with ochreous-orange, crossed by oblique bluish-leaden strigae of varying length, one from $\frac{3}{4}$ of costa running to termen above middle; ocellus tinged with orange, margined anteriorly by a bluish-leaden streak and posteriorly by a golden-metallic streak preceded by three black dots: cilia pale ochreous irrorated with dark fuscous.

Hindwings with 3 and 4 stalked; grey; cilia in ♂ pale greyish-ochreous, in ♀ grey.

Pretoria (Janse); in November and December, two specimens.

Laspeyresia periculosa, n. sp.

♂ ♀. 9-10 mm. Head and thorax dark fuscous sprinkled with whitish. Palpi whitish indistinctly spotted with dark fuscous irroration. Abdomen in ♂ blackish, in ♀ dark grey. Forewings elongate, rather dilated, costa gently arched, apex obtuse, termen slightly sinuate, somewhat oblique; dark fuscous, sprinkled with whitish points; costa with pairs of oblique whitish strigulae, whence arise blue-leaden-metallic streaks, two before middle angulated in disc and running to about middle of dorsum, very obscure on lower portion, next two extended to form margins of ocellus, which contains three black dashes, next one running to termen above middle: cilia fuscous sprinkled with whitish, with dark fuscous subbasal line. Hindwings with 3 and 4 stalked; dark fuscous, lighter towards base; cilia whitish-grey, with dark grey subbasal shade.

Three Sisters (Janse); in February and March, five specimens.

Laspeyresia modica, n. sp.

♂. 9 mm. Head and thorax grey closely irrorated or suffused with whitish. Palpi whitish sprinkled with grey. Abdomen pale grey. Forewings elongate, rather dilated posteriorly, costa gently arched, apex obtuse, termen slightly sinuate, somewhat oblique; dark grey closely irrorated with whitish; costa dark fuscous marked with pairs of obscure whitish strigulae, from which beyond middle rise two very oblique blue-leaden strigae, second running to termen above middle; ocellus margined by leaden-metallic streaks, posterior preceded by three black dots: cilia grey irrorated with white. Hindwings with 3 and 4 stalked; grey, darker towards termen and apex; cilia pale grey.

Pretoria, Three Sisters (Janse); in March, two specimens.

Anthozela, n. g.

Antennae in ♂ simple. Palpi moderate, porrected, second joint shortly rough-scaled above and beneath, terminal joint very short. Thorax without crest. Forewings with 3 from angle, 7 separate, to termen. Hindwings with basal pecten; 3 absent, 5 parallel, 6 and 7 approximated towards base.

Related to early forms of *Laspeyresia.*

Anthozela chrysoxantha, n. sp.

♂ ♀. 11-13 mm. Head, palpi, and thorax bright deep yellow, shoulders and centre of thorax tinged with ferruginous. Abdomen dark grey. Forewings elongate, moderate, slightly dilated posteriorly, costa gently arched, apex obtuse, termen rounded, rather oblique; basal half bright deep yellow, sometimes slightly sprinkled with ferruginous-orange, costa strigulated with ferruginous-orange and sometimes dotted with blackish, edge of this area angulated just beneath costa, margined except on costal portion by a line of black scales; posterior half of wing coppery-orange irregularly marbled and spotted with black and bluish-leaden, costa strigulated with black and with five pairs of short whitish strigulae giving rise to oblique blue-leaden strigae, second extended as a curved subterminal stria to tornus: cilia ochreous tinged with reddish, with a darker reddish basal line spotted with leaden-metallic, on tornus with dark leaden-grey patch. Hindwings rather dark fuscous; cilia fuscous, with darker subbasal line.

Barberton (Janse); in December and January, three specimens.

GELECHIADAE.

Paltodora semnochroa, n. sp.

♂ ♀. 22-25 mm. Head and thorax dark fuscous mixed with whitish. Palpi with second joint dark fuscous, scales roughly expanded above and forming a long broad tuft beneath, apical edge sprinkled with whitish, terminal joint whitish, anteriorly irrorated with blackish. Abdomen dark fuscous, segmental margins mixed with whitish. Forewings elongate, narrow, costa slightly arched, apex produced, acute, termen sinuate, extremely oblique; deep brown; margins and veins marked with slender streaks of dark fuscous suffusion mixed with whitish; cilia fuscous, towards base mixed with dark fuscous and whitish. Hindwings grey; cilia light fuscous.

Three Sisters (Janse); in February and March, two specimens.

Paltodora pammacha, n. sp.

♂. 19-21 mm. Head greyish-white. Palpi with second joint dark fuscous, with long projecting tuft beneath, apical edge white, terminal joint white, anterior edge blackish. Thorax grey mixed with white, anteriorly broadly suffused with blackish. Abdomen grey. Forewings elongate, narrow, costa slightly arched, apex acute, produced, termen somewhat sinuate, extremely oblique; grey, more or less sprinkled or suffused with whitish; costa darker, towards base suffused with blackish; two small black dots beneath costa at $\frac{1}{5}$ and $\frac{1}{3}$; a slender black streak from base along fold, terminated by plical stigma, which is obliquely before first discal; discal stigmata black, first elongate, second dot-like, placed in a pale yellow-ochreous streak running from first to a blackish streak which extends from apex along upper part of termen; cilia light grey suffused with whitish-ochreous, towards base mixed with whitish and dark grey, beneath apex with blackish-grey antemedian shade. Hindwings grey or dark grey; cilia grey, tinged with whitish-ochreous.

Barberton (Janse); in December, two specimens.

Paltodora illuminata, n. sp.

♂ ♀. 18-21 mm. Head and thorax pale ochreous, shoulders irrorated with fuscous. Palpi with second joint ochreous-brown irrorated with dark fuscous, with very long triangular ochreous-brown projecting tuft, apical edge and terminal joint whitish. Abdomen whitish-ochreous. Forewings elongate-lanceolate, acute; light brownish-ochreous, all veins marked with pale greyish-ochreous streaks irrorated with dark fuscous; dark fuscous dots between these streaks beneath costa at $\frac{1}{5}$ and $\frac{1}{3}$, one on fold between these, and three representing stigmata, plical very obliquely before first discal: cilia whitish-ochreous, towards base sprinkled with dark fuscous. Hindwings pale ochreous-grey; cilia clear pale ochreous.

Barberton, Three Sisters (Janse); from January to March, three specimens. Distinguished from *operosa* by the clear ochreous cilia of hindwings.

Aristotelia prominula, n. sp.

♂ ♀. 8-9 mm. Head pale ochreous, face shining grey-whitish. Palpi whitish, second joint irrorated with blackish except apex, terminal joint with black basal and supramedian bands. Thorax pale ochreous, shoulders irrorated with dark grey. Abdomen grey, anal tuft of ♂ whitish-ochreous. Forewings narrow-lanceolate, acute; light ochreous-brown, with a few scattered black scales; a streak of blackish suffusion along costa throughout, becoming very slender towards base, in middle forming a triangular prominence; plical and second discal stigmata small, black; some black dots along posterior part of costa and termen: cilia grey, round apex ochreous-brownish. Hindwings and cilia rather dark grey.

Barberton, Three Sisters (Janse); from December to February, five specimens. Probably allied to the Indian *A. galeotis*.

Aristotelia trematias, n. sp.

♂ 9 mm., ♀ 12 mm. Head pale greyish-ochreous irrorated with fuscous. Palpi ochreous-white with a few scattered black scales, second joint suffusedly irrorated with blackish except towards apex. Thorax fuscous. Abdomen whitish-ochreous irrorated with fuscous. Forewings elongate, narrow, costa gently arched, apex acute, termen extremely obliquely rounded; 6 separate; light fuscous irrorated with dark fuscous; stigmata rather large, blackish, plical obliquely before first discal, these two elongate: cilia light fuscous, towards base sprinkeld with black. Hindwings and cilia light grey.

Barberton, Three Sisters (Janse); in December and February, two specimens.

Aristotelia comis, n. sp.

♀. 11 mm. Head whitish, crown irrorated with dark fuscous. Palpi whitish, second and terminal joints each with two broad bands of blackish irroration. Thorax whitish irrorated with blackish. Abdomen blackish-grey. Forewings elongate, narrow, costa gently arched, apex obtuse, termen extremely obliquely rounded; 6 separate; grey irrorated with whitish and blackish; a small ochreous-brown spot in disc near base; an irregular blackish interrupted line crossing wing near beyond this; two moderate ochreous-brown fasciae about $\frac{1}{3}$ and $\frac{2}{3}$, edged with whitish, and irrorated with blackish towards costa, first oblique, its posterior edge with a strong prominence below middle, surmounted by a black dot, second direct, dilated towards costa; a black longitudinal mark in disc beyond this; an ochreous-brown apical spot, its angles produced along costa and termen; cilia whitish, with a black subbasal line cut by a series of white marks, and two grey lines, on tornus pale greyish. Hindwings grey; cilia light grey.

Three Sisters (Janse); in February, one specimen.

Polyhymno chionarcha, n. sp.

♂. 9-11 mm. Head and thorax shining white, shoulders narrowly blackish. Palpi white, second joint externally dark fuscous except apex. Antennal ciliations of ♂ 1. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, narrow, costa hardly arched, faintly sinuate in middle, apex pointed, subfalcate, termen concave beneath apex, then very obliquely rounded; shining white; an irregular blackish streak along costa from base to $\frac{3}{4}$, thickened near base and towards middle, terminated by an acutely angulated silvery-metallic transverse line running to tornus, edged with blackish towards tornus, angle of this line filled by a fulvous spot preceded by two black marks; sometimes a small cloudy blackish spot on dorsum before middle; area beyond this line fulvous, on costa blackish with two outwardly oblique white strigulae and one inwardly oblique: cilia dark fuscous, beneath tornus whitish, above apex with two white strigulae parallel to margin, beneath apex with a black basal dot, on termen extreme base white. Hindwings grey, more or less whitish-tinged anteriorly; cilia in Pretoria specimen ochreous-whitish, in Barberton specimen grey.

Pretoria, Barberton (Janse); in December, two specimens.

Polyhymno paracma Meyr.

The apical markings of forewings are accidentally omitted in my published description, viz., a brownish-ochreous streak running into apex, and two short white wedge-shaped costal marks running into this.

Polyhymno tetragrapha, n. sp.

♀. 16 mm. Head shining whitish. Palpi dark fuscous. Thorax dark fuscous, patagia shining white except shoulders. Abdomen grey, beneath whitish. Forewings elongate, narrow, costa almost straight, apex strongly produced, acute, subfalcate, termen concave beneath apex, then obliquely rounded; dark purplish-fuscous mixed with blackish; a broad white median streak from base, posteriorly attenuated to a point, not reaching termen; some whitish suffusion towards dorsum posteriorly; a fine white oblique streak from beneath middle of costa and a rather broad one from submedian fold opposite meeting at an acute angle just beyond apex of median streak, angle suffused with light brownish; an acutely angulated silvery transverse line beyond this, lower half close before termen, terminal edge beyond this slenderly brownish preceded by a fine white line; a fine light ochreous-brown streak from $\frac{3}{4}$ of costa into apical projection, above which are three wedge-shaped white marks from costa: cilia dark fuscous, above apex with two wedge-shaped white marks, on upper part of termen with a basal patch of white suffusion, in which are a black mark in concavity and three black dots beneath it. Hindwings dark grey; cilia grey.

Barberton (Miss Williams, Janse); in December and March, two specimens.

Polyhymno hieracitis, n. sp.

♀. 10-11 mm. Head shining ochreous-white. Palpi white, second joint fuscous except towards apex. Thorax brownish, patagia white, shoulders narrowly brown. Abdomen grey. Forewings elongate, narrow, costa hardly arched, apex pointed, considerably produced, subfalcate, termen concave beneath apex, then very obliquely rounded; fuscous, suffused with dark fuscous in disc; a rather broad shining ochreous-white median longitudinal streak from base to near termen, apex obtuse; between this and tornus is an indistinct short oblique whitish line, sometimes suffused into the streak; a whitish line along costa from near base to about middle thence obliquely to above extremity of median streak ; an acutely angulated bluish-leaden-metallic transverse line beyond apex of median streak, becoming white on costa ; apical area beyond this somewhat tinged with fulvous, marked on costa with three short wedge-shaped white marks separated with blackish : cilia grey, above apex dark fuscous with two wedge-shaped white marks, at apex with a blackish hook, on termen with a white subbasal line edged externally with a black mark beneath apex and two cloudy blackish-grey dots below this. Hindwings grey ; cilia light grey, towards apex tinged with whitish.

Three Sisters (Janse) ; in February and March, three specimens. Near *palinorsa*, but without the white lines of thorax or white subdorsal line and pale yellowish apical streak of forewings. A specimen from Haenertsburg (Swierstra), not in good condition, previously regarded as *palinorsa*, is apparently really this species.

Polyhymno oxystola, n. sp.

♀. 11-12 mm. Head fuscous, face and sides of crown white. Palpi white, second joint dark fuscous except apex, upper half of terminal joint dark fuscous anteriorly. Thorax white, with broad fuscous stripe on each side of back. Abdomen grey, segmental margins whitish. Forewings elongate, narrow, costa almost straight, apex pointed, considerably produced, subfalcate, termen concave beneath apex, then very obliquely rounded ; rather dark fuscous, dorsal area lighter ; a rather broad shining white median longitudinal streak from base to near termen, posteriorly acutely pointed, edged beneath by a streak of dark fuscous suffusion ; a white line along costa from near base to near middle, thence running obliquely into apex of median streak ; a suffused white streak beneath submedian dark fuscous streak from before middle of wing to its extremity, sending a suffused oblique branch to tornus ; a silvery-metallic acutely angulated transverse line beyond apex of median streak, becoming white towards costa, lower portion almost terminal ; a pale brownish-ochreous slender streak running above angle of this from near costa into apex ; two oblique white wedge-shaped marks running from costa into this, second followed by a blackish dot very finely edged posteriorly with whitish : cilia grey, above apex dark fuscous, with two white wedge-shaped marks, below apex with a black subbasal mark, beneath this with a whitish patch marked with a very fine ochreous-brown subbasal line. Hindwings grey ; cilia light grey, round apex tips whitish.

Barberton (Janse) ; in December, two specimens.

Polyhymno inermis, n. sp.

♀. 8 mm. Head and thorax ochreous, face shining whitish-ochreous. Palpi ochreous-yellowish, terminal joint whitish, anterior edge blackish. Abdomen grey. Forewings elongate, rather narrow, costa hardly arched, apex slenderly caudate, termen sinuate, very oblique ; ochreous-brownish ; a fine white oblique striga from costa at $\frac{2}{3}$, costal edge blackish on each side of this, its apex extended as a leaden-grey line to near termen beneath apex, thence sharply angulated and continued near termen to near tornus ; two wedge-shaped white marks from costa towards apex : cilia pale grey, above apex with a white patch marked with three short dark fuscous lines converging to apex, on termen with a dark grey subbasal line marked with black. Hindwings grey; cilia pale grey.

Barberton (Janse); in December, one specimen.

Idiophantis butyraula, sp. n.

♂. 15 mm. Head and thorax light ochreous-yellowish, patagia fuscous. Palpi whitish, anterior edge of terminal joint grey. Abdomen light greyish, anal tuft whitish-ochreous. Forewings elongate, narrow, costa slightly arched, termen with deep semioval excavation between slender pointed apical and broad rounded-obtuse tornal prominences; 2 and 3 separate, 6 present; fuscous; a broad light ochreous-yellow streak along dorsum throughout, from beyond middle dilated so as to reach half across wing; a fine strongly-curved violet-whitish line from $\frac{3}{4}$ of costa to tornus, finely edged with dark fuscous posteriorly, margined anteriorly by an ochreous-yellow line edged with a few fuscous scales, and posteriorly on upper half by a similar line terminated beneath by a blackish dot; apical prominence silvery-whitish: cilia pale yellowish, on middle of termen with a bronzy-metallic spot. Hindwings pale greyish, on tornus tinged with whitish-ochreous; on undersurface with a fringe of long fuscous hairs along lower margin of cell; cilia whitish-yellowish, round apex with grey subbasal line.

Barberton (Janse); in December, one specimen.

Anacampsis oncodes, n. sp.

♀. 18-19 mm. Head, thorax, and abdomen dark purplish-fuscous, face light ochreous-yellowish. Palpi ochreous-yellow, terminal joint with a fine black anterior line. Antennae pale yellowish ringed with dark fuscous. Posterior tibiae dark grey. Forewings elongate, rather narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; 6 separate; dark purplish-slaty-fuscous; stigmata black, an additional elongate black dot on fold before plical, plical obliquely before first discal, first discal elongate; a few black scales round apical part of costa and termen: cilia dark fuscous, sprinkled with blackish towards base, on costa at $\frac{2}{3}$ with a faint spot of pale greyish-ochreous suffusion. Hindwings dark grey; cilia fuscous, darker towards base.

Three Sisters (Janse); in February and March, two specimens. Allied to *circaea*.

Epithectis sordidula, n. sp.

♂ ♀. 6-8 mm. Head, palpi, and thorax grey-whitish. Abdomen whitish-grey, apex ochreous-whitish. Forewings lanceolate, acute; ochreous-whitish, variably tinged, sprinkled, or irrorated with grey; a grey elongate dot on fold at $\frac{1}{4}$; stigmata small, dark grey, with one or two blackish scales, plical very obliquely beyond first discal: cilia ochreous-whitish. Hindwings grey; cilia ochreous-grey-whitish.

Barberton, Waterval Onder (Janse); from November to January, six specimens.

Epithectis farinata, n. sp.

♂. 12-13 mm. Head and thorax pale whitish-ochreous sprinkled with blackish-fuscous. Palpi white, second joint dark fuscous except apex, terminal joint with blackish basal ring and supramedian band.

Abdomen whitish-ochreous, slightly tinged with grey. Forewings lanceolate, acute; pale whitish-ochreous, irregularly irrorated with dark fuscous; a patch of dark fuscous suffusion on basal portion of costa; stigmata suffused, dark fuscous, plical obliquely before first discal: cilia pale whitish-ochreous, towards base spotted with dark fuscous irroration. Hindwings and cilia pale whitish-ochreous.

Barberton (Janse); in December and January, six specimens. Near *carinata*, but larger, and distinguished by pale whitish-ochreous hindwings and cilia.

Telphusa calathaea, n. sp.

♀. 15 mm. Head and thorax white-brownish. Palpi whitish, sprinkled with grey, second joint with basal half dark grey with two black bands and a blackish-grey subapical spot, terminal joint with two blackish bands. Abdomen grey, segmental margins ochreous-whitish. Forewings elongate, narrow, costa slightly arched, apex pointed, termen extremely obliquely rounded; pale brownish, finely whitish-sprinkled, with a few scattered blackish scales; two small confluent black spots on base of costa, costal edge blackish thence to antemedian patch; irregular subtriangular blackish patches on costa before and beyond middle, first reaching to beyond fold, second not reaching half across wing; a raised transverse mark of a few blackish scales representing second discal stigma; apical area suffused with grey, mixed with blackish scales, intersected by an obscure pale curved shade from $\frac{3}{4}$ of costa to tornus: cilia grey sprinkled with whitish. Hindwings grey, paler and thinly scaled towards base; cilia pale greyish.

Barberton (Janse); in December, one specimen.

Telphusa amphichroma, n. sp.

♀. 13 mm. Head whitish irrorated with grey. Palpi white, second joint with basal, median, and apical grey bands irrorated with blackish, terminal joint with two rings of blackish irroration. Thorax pale ochreous-brownish. Abdomen grey-whitish. Forewings elongate, narrow, costa slightly arched, apex pointed, termen extremely obliquely rounded; grey irrorated with whitish; an ochreous-brownish streak along costa from base, on median third becoming an irregular patch reaching half across wing, apical third represented by some indefinite brownish suffusion; a blackish-grey patch occupying basal $\frac{2}{5}$ of dorsum and reaching half across wing, whence a dark grey streak extends along dorsum to tornus, its posterior portion enlarged as an irregular patch to meet costal ochreous-brown patch, and terminated by some raised blackish scales; plical and first discal stigmata cloudy, blackish, plical slightly anterior, resting on edge of dorsal streak, first discal on edge of costal patch: cilia grey sprinkled with whitish, at base with a few black scales. Hindwings grey, paler and thinly scaled anteriorly; cilia pale grey.

Barberton (Janse); in December, one specimen.

Telphusa sematica, n. sp.

♂. 12 mm. Head and thorax pale ochreous irrorated with dark fuscous, patagia dark fuscous. Palpi fuscous irregularly irrorated with blackish. Abdomen grey, two basal segments ochreous-yellowish. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; pale greyish-ochreous closely irrorated with dark fuscous, and tinged with purplish-grey; four small blackish spots on costa between base and $\frac{2}{3}$, each accompanied beneath by a small ochreous spot; some blackish suffusion towards base of dorsum; four small spots of raised pale ochreous scales towards dorsum between $\frac{1}{3}$ and tornus; some blackish suffusion in disc about $\frac{1}{3}$; stigmata obscure, blackish, plical rather before first discal, both discal accompanied by small raised ochreous spots; a transverse rounded-triangular purple-blackish blotch in disc towards apex; posterior part of costa and termen spotted with pale ochreous and blackish: cilia pale greyish, round apex irrorated with black. Hindwings grey, paler and thinly scaled in disc and anteriorly; cilia light grey.

Barberton (Janse); in December, one specimen.

Telphusa castrigera, n. sp.

♀. 14 mm. Head and thorax whitish mixed with black, thorax with two irregular blackish dorsal bars. Palpi whitish irrorated with blackish, second and terminal joints each with three bands of blackish suffusion. Abdomen dark grey mixed with whitish, with ochreous-yellowish dorsal patch on segments 2 and 3. Forewings elongate, narrow, costa gently arched, apex pointed, termen very obliquely rounded, surface irregularly roughened with scales; dark grey; basal area blackish-grey, limited by an irregular oblique blackish fascia, followed by a broader fascia of whitish suffusion except towards dorsum; an irregular white ring in middle of disc, partly tinged with ochreous, anteriorly projecting into preceding whitish fascia; a raised blackish transverse mark extending from tornus more than half across wing, surmounted with pale ochreous; beyond this some whitish suffusion towards costa; some black irroration towards apex: cilia rather dark grey, slightly whitish-sprinkled. Hindwings grey, darker posteriorly; cilia grey.

Barberton (Janse); in December, one specimen.

Telphusa craterota, n. sp.

♀. 12-13 mm. Head white sprinkled with pale grey. Palpi white, second and terminal joints each with three blackish bands. Thorax whitish partially tinged with brownish, shoulders blackish. Abdomen grey. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; grey; a black basal patch occupying $\frac{1}{3}$ of wing, edge nearly vertical, slightly irregular, margined with whitish suffusion, forming a white spot on costa; a white somewhat raised spot in middle of disc; a small blackish spot beneath this, followed by some raised whitish scales; an irregularly triangular blackish blotch on costa at $\frac{2}{3}$, connected with a blackish tornal spot by a short fine black white-edged streak, preceded by two small spots of brownish suffusion; beyond this a suffused white costal spot, whence a fine angulated whitish line crosses wing, followed by some brownish suffusion towards apex of wing, and scattered whitish scales: cilia rather dark grey, round apex slightly sprinkled with whitish. Hindwings grey, thinly scaled in disc anteriorly; cilia grey.

Barberton (Janse); in December, two specimens.

Telphusa caelata, n. sp.

♂. 17 mm. Head white. Palpi white, basal joint, lower third and a partial subapical ring of second joint, and two bands of terminal joint black. Thorax white, with a triangular black dorsal patch, shoulders narrowly black. Abdomen ochreous-white. Forewings elongate, narrow, costa moderately arched, apex pointed, termen extremely obliquely rounded; ochreous-white, markings black; an oblique irregular fascia from basal portion of costa to dorsum before middle, constricted in disc, triangularly dilated on dorsum; a flattened-triangular patch on costa before middle; an irregular inwardly oblique fascia from costa beyond middle reaching $\frac{2}{3}$ across wing, from middle of posterior edge sending a narrow bar to tornus; a spot on termen below middle just touching tornal bar, and one on costa before apex: cilia grey, sprinkled with whitish. Hindwings ochreous-whitish tinged with grey towards costa posteriorly; cilia ochreous-whitish, becoming light grey on apex and costa.

Three Sisters (Janse); in March, one specimen.

Gelechia textifera, n. sp.

♂ ♀. 9 mm. Head whitish, crown somewhat sprinkled with grey. Palpi whitish, second and terminal joints each with two dark fuscous bands. Thorax whitish sprinkled with dark fuscous, with a yellowish stripe on each side of back, shoulders suffused with dark fuscous irroration, Abdomen grey, anal tuft whitish. Forewings elongate, narrow, costa gently arched, apex obtuse pointed, termen extremely obliquely rounded; deep yellow; three irregular very oblique fasciae of dense dark purplish-fuscous irroration occupying most of wing, first from base of costa to middle of dorsum, connected with a patch on base of dorsum, second from $\frac{1}{3}$ of costa to tornus, third dilated to extend on costa from before middle to $\frac{3}{4}$, connected with second in disc and again on tornus, very irregular in apical area and connected with a costal patch before or including apex; stigmata blackish, plical rather before first discal, these two on margins of second fascia, second discal minute, placed in a round spot of ground colour lying between connections of second and third fasciae; cilia grey, towards base sprinkled with black. Hindwings 1, apex triangularly produced; grey; cilia light grey.

Barberton (Janse); in December and January, two specimens.

Gelechia resecta, n. sp.

♂. 11 mm. Head white, sides of crown irrorated with grey. Palpi white, second joint with lower half and a subapical ring of irroration blackish, terminal joint as long as second, with black subapical and submedian rings. Thorax white dorsally sprinkled with grey, anterior margin blackish. Abdomen whitish-grey. Forewings elongate, narrow, costa faintly sinuate, apex pointed, termen extremely obliquely rounded; grey, sprinkled with whitish points and scattered blackish scales; a black mark on base of costa, one along base of dorsum, and a small irregular spot between these; an irregular blotch of blackish suffusion in disc at $\frac{1}{4}$; stigmata rather large, suffused, black, plical near before first discal, second discal edged with white posteriorly, touching a blotch of blackish irroration on costa beyond middle, and a small tornal spot: cilia light grey, sprinkled with blackish on basal half. Hindwings 1, apex produced, termen sinuate; grey, thinly scaled in disc and towards base; cilia light grey.

Pretoria (Swierstra); in November, one specimen.

Gelechia fornacaria, n. sp.

♂ ♀. 12-14 mm. Head grey irrorated with black, face whitish. Palpi whitish densely and suffusedly irrorated with black, second joint more or less suffused with white towards middle, with strong rough scales beneath. Thorax brown, more or less generally suffused with blackish. Abdomen pale greyish. Forewings elongate, narrow, costa slightly arched, apex pointed, termen extremely obliquely rounded; brown; markings dark grey or fuscous irrorated with black; basal third irregularly and suffusedly spotted, and on dorsum wholly suffused with blackish; middle third of dorsum suffused with dark grey; stigmata moderately large, black, plical beneath first discal, second discal resting on an irregular dark tornal blotch, a triangular costal blotch above this; some suffused spots round posterior part of costa and termen, sometimes suffused into an apical patch: cilia grey, round apex irrorated with black and whitish. Hindwings 1, apex considerably produced, acute-triangular; grey, paler anteriorly; cilia light grey.

Waterval Onder (Janse); in November, three specimens.

Gelechia ferax, n. sp.

♂ ♀. 15-17 mm. Head and thorax pale ochreous. Palpi ochreous-whitish, irregularly sprinkled with dark fuscous, terminal joint somewhat shorter than second. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; yellow-ochreous, sometimes suffused with ferruginous towards costa and dorsum; veins streaked with purplish-fuscous suffusion sometimes tinged with crimson; a streak of purplish-fuscous suffusion along costa from more or less near base to apex; a patch of purplish-fuscous suffusion along dorsum from about $\frac{1}{3}$ to tornus, thence continued as a slender streak along termen; stigmata minute, black, first discal placed higher than second, sometimes obsolete, plical larger, before first discal, sometimes additional minute black dots on fold before and beyond plical: cilia purplish-grey, on basal half tinged with crimson and sprinkled with dark fuscous. Hindwings 1, apex produced, acute; grey; cilia light ochreous-grey.

Barberton, Three Sisters (Miss Williams, Janse); from December to March, six specimens. Certainly near *opaula*, with which it may prove identical, but none of the specimens agree with the original type of that species, differing from it by the dark costal and dorsal suffusion and absence of black dot beneath costa near base.

Gelechia phoenaula, n. sp.

♂. 13-14 mm. Head white. Palpi white, second joint with irregular blackish subapical band, terminal joint shorter than second, with blackish median band. Thorax pale ochreous, anteriorly suffused with whitish. Abdomen grey, becoming whitish-ochreous on basal third. Forewings elongate, rather narrow, costa gently arched, apex acute, termen faintly sinuate, extremely oblique; deep yellow-ochreous; a slender white streak along costa from near base to $\frac{3}{4}$, edged beneath by a few black scales; margins of cell, veins 1*b* and 7-11 marked with thick crimson-grey streaks, on lower angle of cell projecting suffusedly to tornus, veins 4-6 marked with fine lines; a black dot beneath fold at $\frac{1}{4}$; stigmata small, black, plical somewhat before first discal; some obscure blackish dots on posterior part of costa and termen: cilia grey. Hindwings 1, apex pointed, rather strongly produced; grey, lighter towards base; cilia light grey.

Three Sisters (Janse); in March, two specimens. Very near *zetterstedtiella*, but smaller, brighter-coloured, and distinguished by white and black palpi, and posteriorly grey abdomen (in *zetterstedtiella* the abdomen is wholly whitish-ochreous).

Gelechia rhodochra, n. sp.

♀. 17-18 mm. Head and thorax pale ochreous, more or less rosy-tinged. Palpi whitish-ochreous. Abdomen grey. Forewings elongate, rather narrow, costa gently arched, apex acute, termen faintly sinuate, very oblique; rosy-ochreous, costa suffused with light yellow-ochreous; costal edge black at base; a black streak along basal third of dorsum; plical stigma well-marked, black; second discal minute, blackish, between this and termen a spot of fuscous suffusion; a more or less developed fuscous spot on costa at $\frac{2}{3}$, sometimes little marked; a few fuscous scales on termen: cilia rosy-ochreous. Hindwings slightly over 1, apex triangularly produced, acute; grey; cilia pale grey.

Barberton, Waterval Onder (Janse); in November and December, two specimens.

Gelechia matutina, n. sp.

♀. 15 mm. Head and thorax rosy-ochreous-whitish, patagia blackish. Palpi white, second joint blackish except apical third, terminal joint longer than second, anterior edge blackish. Abdomen pale grey. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; blackish; a moderate pale rosy-ochreous streak from near base along dorsum and termen to near apex, upper edge irregular, triangularly indented about tornus: cilia whitish-ochreous tinged with rosy, with blackish median line and indistinct subapical line. Hindwings pale grey, apex darker; cilia pale grey.

Waterval Onder (Janse); in November, one specimen.

Gelechia stasiarcha, n. sp.

♂. 15-16 mm. Head white. Palpi white, second joint blackish on basal $\frac{2}{3}$ (in one example almost wholly white), anterior edge of terminal joint blackish towards apex. Thorax white, patagia blackish-fuscous. Abdomen ochreous-whitish or fuscous. Forewings elongate, rather narrow, costa gently arched, apex pointed, termen slightly sinuate, very oblique; shining white; a broad dark purplish-fuscous median longitudinal band from base to apex: cilia white, on costa with basal and two other dark fuscous lines converging to apex. Hindwings over 1, apex obtuse, termen slightly sinuate; grey-whitish or grey; cilia whitish or whitish-grey.

Barberton (Janse); in December and January, two specimens. The differences in the specimens are certainly curious, but I am unable to regard them as distinct. The species resembles *trisignis*, but is obviously broader-winged, and distinguished by the dark lines in costal cilia.

Gelechia devia, n. sp.

♂ ♀. 13 mm. Head and thorax white finely sprinkled with dark fuscous, with a fine black central line on crown and anterior part of thorax, and black subdorsal streaks on thorax posteriorly. Palpi white, second and terminal joints each with two blackish bands. Abdomen whitish. Forewings elongate, narrow, costa gently arched, apex pointed, termen very oblique rounded; white, on dorsal half irrorated with fuscous, on costal half with streaks of fuscous or dark fuscous irroration on veins; a rather irregular narrow black streak runs from base of costa very obliquely to disc and thence slightly sinuate through middle of disc to apex, sharply interrupted at $\frac{2}{3}$, with black dots above and below interruption; a short fine black dash at base beneath this, one on fold in middle connected with its lower edge, and one sometimes longer towards costa before middle; a series of black marks round posterior part of costa and termen: cilia grey sprinkled with whitish, at apex with a black bar. Hindwings somewhat over 1, termen slightly sinuate; light grey, paler towards base; cilia pale grey.

Barberton, Three Sisters (Miss Williams, Janse); in February and March, two specimens.

Gelechia ophitis, n. sp.

♂. 23 mm. Head whitish-ochreous. Palpi rosy-whitish, second joint slightly sprinkled with fuscous, basal half dark fuscous, terminal joint much longer than second, apex suffused with dark fuscous. Thorax whitish-ochreous tinged with brownish, with a blackish stripe on each side of back, shoulders fuscous. Abdomen fuscous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen slightly rounded, rather strongly oblique; fuscous, with a few scattered black scales; some ochreous-whitish suffusion towards median third of dorsum; a thick black median longitudinal streak from base to $\frac{2}{3}$, lower edge suffused, upper sharply marked, forming two deep sinuations filled with ochreous-whitish before and beyond middle and a triangular prominence between these; a short suffused blackish apical streak, and one less marked beneath it, surrounded with a purplish tinge: cilia pale greyish-ochreous mixed with fuscous. Hindwings over 1, apex obtuse, termen hardly sinuate; fuscous; cilia light greyish-ochreous.

Uitenhage (Munro); in January, one specimen.

Gelechia ochnias, n. sp.

♂. 17-18 mm. Head pale rosy-ochreous, tinged with fuscous on crown. Palpi ochreous-whitish, second joint suffused with dark fuscous except towards apex, anterior edge of terminal joint suffused with dark fuscous. Thorax dark fuscous, dorsally sometimes tinged with rosy-ochreous. Abdomen pale greyish-ochreous, three basal segments pale yellow-ochreous. Forewings elongate, narrow, costa slightly arched, apex pointed, termen extremely obliquely rounded; dark fuscous; a black streak along basal fourth of costa; a thick black streak on fold from near base to $\frac{1}{3}$, followed by some red-brownish suffusion; a rather elongate pointed black spot in disc before middle, and an irregular black spot beyond middle, connected by some ochreous-white edging; an ochreous-whitish spot on costa at $\frac{4}{5}$, whence some very indistinct pale reddish-ochreous suffusion crosses wing: cilia fuscous, towards base mixed with dark fuscous and tinged with red-brownish. Hindwings over 1, apex obtuse, termen slightly sinuate; grey; cilia pale greyish.

Silverton, Donkerhoek, Middelburg (Janse); in October, three specimens. Allied to *mesacta*.

Gelechia bletrias, n. sp.

♀. 24 mm. Head and thorax whitish-ochreous, patagia tinged with brown. Palpi whitish-ochreous, second joint with a few brownish scales. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa slightly arched, apex obtuse-pointed, termen slightly rounded, very oblique; whitish-ochreous, with a few pale brownish scales, costa tinged with light brownish; two dark grey dots suffused with brown beneath costa towards base; stigmata dark grey suffused with brownish, plical rather obliquely before first discal, two additional similar dots placed before second discal so as to coalesce with it into a crescentic mark, its extremities pointing downwards; four dark grey dots suffused with brownish on costa posteriorly: cilia ochreous-whitish. Hindwings over 1, apex obtuse, termen slightly sinuate; grey-whitish, towards costa somewhat greyer; cilia ochreous-whitish.

Middelburg (Janse); in October, one specimen.

Gelechia cophias, n. sp.

♀. 19 mm. Head and thorax whitish-fuscous sprinkled with fuscous. Palpi fuscous-whitish, second joint irregularly mixed with dark fuscous, terminal joint longer than second, sprinkled with dark fuscous on basal half. Abdomen pale greyish-ochreous. Forewings elongate, rather narrow, costa slightly arched, apex obtuse, termen obliquely rounded; light fuscous sprinkled with darker fuscous and black; base of dorsum pale, surmounted by a cloudy spot of fuscous suffusion; stigmata blackish, discal approximated, plical very obliquely before first discal; some indistinct fuscous suffusion running from above discal stigmata to costa before apex: cilia fuscous sprinkled with whitish. Hindwings over 1, apex obtuse, termen hardly sinuate; grey, darker posteriorly; cilia whitish-grey.

Waterval Onder (Janse); in November, one specimen.

Gelechia epiphloea, n. sp.

♀. 22 mm. Head ochreous-whitish sprinkled with dark fuscous. Palpi whitish sprinkled with blackish, second joint with basal $\frac{2}{5}$ dark fuscous, terminal joint longer than second, with dark fuscous submedian and apical bands. Thorax ochreous-whitish irrorated with dark fuscous. Abdomen whitish-ochreous sprinkled with fuscous. Forewings elongate, narrow, costa gently arched, apex obtuse, termen obliquely rounded; fuscous irregularly mixed with dark fuscous and ochreous-whitish; blackish spots on costa at base and before $\frac{1}{4}$, space between and round these suffused with ochreous-whitish; a suffused blackish spot in disc at $\frac{1}{4}$, and a short blackish streak on fold before this; stigmata blackish, plical rather before first discal, first discal followed by a more or less extended ochreous-whitish mark; a blackish spot on costa at $\frac{3}{4}$, indistinctly connected with second discal stigma, and followed by a rosy-ochreous-whitish spot, whence an angulated series of undefined ochreous-whitish dots runs to tornus: cilia grey sprinkled with whitish, towards base faintly rosy-tinged, basal half sprinkled with dark fuscous. Hindwings 1, apex obtuse, termen not sinuate; grey, somewhat darker posteriorly; cilia pale greyish-ochreous, greyer towards base.

Barberton (Janse); in December, one specimen.

Gelechia psimythota, n. sp.

♂. 15 mm. Head and thorax silvery-white, shoulders narrowly blackish. Palpi white, base blackish, terminal joint shorter than second, with two blackish bands. Abdomen whitish-ochreous, uncus long, clothed with long hairs. Forewings elongate, rather narrow, costa gently arched, apex tolerably pointed (damaged), termen extremely obliquely rounded; ochreous-white; a black dot almost at base of fold; a narrow oblique irregular dark fuscous fascia towards base, extended along costa to base, anterior edge suffused; a semioval dark fuscous spot on costa towards middle; a narrower semioval dark fuscous spot on costa about $\frac{2}{3}$; second discal stigma transverse-linear, dark fuscous; a tornal patch of dark fuscous suffusion beneath this whence a suffused dark fuscous streak runs along termen to apex: cilia fuscous. Hindwings whitish-grey; cilia pale fuscous.

Barberton (Janse); in December, one specimen. Near the European *scalella.*

Gnorimoschema phalacrodes, n. sp.

♂ ♀. 13-14 mm. Head and thorax ochreous-whitish, in ♂ slightly sprinkled with black, shoulders blackish. Palpi ochreous-whitish, second joint with black basal band and subapical ring, rough anterior scales mixed with grey, terminal joint with two broad bands of black irroration. Abdomen grey, segmental margins mixed with whitish. Forewings elongate, narrow, widest near base, thence narrowed to acute apex; fuscous tinged with grey and brownish and sprinkled with black; basal area spotted with black, with an irregular ochreous-whitish patch towards costa near base; stigmata rather large, irregular, black, plical slightly before first discal, median area of disc between stigmata and round first discal largely occupied by a broad patch of ochreous-whitish suffusion; an irregular rather thick sinuate transverse ochreous-whitish streak about $\frac{3}{4}$; several black dots round apical part of costa and termen: cilia grey, sprinkled with black and whitish on basal half. Hindwings grey, paler and semi-transparent anteriorly; cilia light grey.

Waterval Onder (Janse); in November, two specimens.

Lecithocera craniota, n. sp.

♂. 13 mm. Head pale ochreous-yellowish. Palpi whitish-ochreous, second joint dark fuscous except apex. Antennae somewhat stout, grey (? under 1). Thorax dark bronzy-grey. Abdomen grey, base of segments pale yellowish. Posterior tibiae ochreous-whitish. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen obliquely rounded; 2 and 3 short-stalked, 7 and 8 stalked, 7 to costa; bronzy-grey, suffusedly irrorated with dark fuscous: cilia grey. Hindwings and cilia grey-whitish.

Barberton (Janse); in December and January, three specimens. The antennae (unless possibly broken) seem to be somewhat shorter than forewings, but the species does not agree with any other genus, and suits well here.

Lecithocera propitia, n. sp.

♂ ♀. 12–14 mm. Head whitish-ochreous. Palpi whitish, second joint dark fuscous except towards apex, terminal joint thickened, in ♂

with an external line of dark fuscous scales. Antennae dark fuscous. Thorax dark purplish-fuscous. Abdomen grey, segments with bronzy-ochreous basal bands. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen rounded, rather strongly oblique; 2 and 3 stalked, 8 absent, 9 out of 7; dark purplish-fuscous; cilia concolorous. Hindwings and cilia whitish-grey.

Barberton (Janse); in December and January, two specimens.

Lecithocera myopa, n. sp.

♂. 11-12 mm. Head dark fuscous, sides of crown broadly ochreous-yellowish. Palpi yellow-whitish, second joint with a lateral streak of dark fuscous suffusion. Antennae whitish-yellowish, bases of joints sometimes fuscous. Thorax dark purplish-grey, shoulders broadly whitish-ochreous. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen obliquely rounded; 2 and 3 short-stalked, 7 and 8 stalked, 7 to apex; purplish-grey, irrorated with dark fuscous and blackish; a small whitish-ochreous spot at base in middle; discal stigmata cloudy, dark fuscous: cilia grey, with darker median shade. Hindwings with 3 and 4 stalked or coincident; rather dark grey; cilia grey.

Barberton (Janse); in December, three specimens.

Lecithocera lucernata, n. sp.

♂. 18 mm. Head dark purplish-fuscous, side tufts and sides of face orange-yellow. Palpi ochreous-yellow, second joint suffused with rather dark fuscous except apex. Antennae ochreous-yellow. Thorax dark purplish-fuscous. Abdomen grey. Forewings elongate, narrow, posteriorly rather dilated, costa gently arched, apex obtuse, termen obliquely rounded; 2 and 3 stalked, 7 and 8 stalked; bronzy-fuscous irrorated with dark purplish-fuscous; a white discal dot before $\frac{2}{3}$: cilia greyish, with darker subbasal shade. Hindwings with 3 and 4 stalked; grey; cilia greyish.

Pretoria (Swierstra); in November, one specimen.

Lecithocera picrodora, n. sp.

♀. 11 mm. Head and antennae whitish-yellowish. Palpi whitish-yellowish, second joint tinged with grey on basal $\frac{2}{3}$, apex of terminal joint dark fuscous anteriorly. Thorax purplish-fuscous. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex round-pointed, termen sinuate, oblique; 2 and 3 short-stalked, 7 and 8 stalked, 7 to termen, 9 and 10 connate; dark purplish-fuscous; costal edge whitish-ochreous from before middle almost to apex; a transverse whitish-ochreous bar in disc at $\frac{3}{5}$: cilia fuscous, on termen with outer half whitish preceded by a blackish-fuscous shade. Hindwings pale whitish-ochreous, towards termen and dorsum tinged with grey; cilia ochreous-whitish, with faint grey subbasal line round apex.

Three Sisters, Barberton (Janse); in January and March, two specimens.

Lecithocera furnaria, n. sp.

♂ ♀. 12-13 mm. Head bronzy-fuscous, sides of crown ochreous-whitish. Palpi ochreous-whitish, second joint suffused with dark fuscous except apex, anterior edge of terminal joint dark fuscous. Antennae whitish-ochreous. Thorax dark fuscous, with an ochreous-whitish streak on each side of back. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen slightly rounded, oblique; 3 absent, 2 and 4 stalked, 7 absent, 8 and 9 stalked; dark fuscous; a whitish-ochreous antemedian fascia, straight and sharply defined anteriorly, broadly suffused posteriorly, followed by a blackish-fuscous discal dot; posterior area lighter and somewhat sprinkled with whitish-ochreous, with a whitish-ochreous line running from costa about $\frac{3}{4}$ to dorsum before tornus, angulated inwards above middle and outwards in middle, well-defined anteriorly but more or less suffused posteriorly, forming a spot or patch on costa: cilia whitish-ochreous barred with dark fuscous. Hindwings whitish-ochreous, more or less infuscated towards apex; cilia whitish-ochreous.

Barberton, Waterval Onder (Janse); in November and December, two specimens.

Homaloxestis aestuosa, n. sp.

♂ ♀. 8-11 mm. Head whitish-ochreous, sides tinged with fuscous. Palpi pale ochreous, second joint with upper longitudinal half fuscous, terminal joint shorter than second, externally infuscated. Antennae fuscous. Thorax fuscous, somewhat mixed with whitish-ochreous. Abdomen grey; anal tuft whitish-ochreous. Forewings elongate, narrow, costa gently arched, apex obtuse, termen rounded, oblique; 7 absent; dark fuscous, irrorated with whitish; stigmata very indistinct, cloudy, dark fuscous, plical obliquely before first discal; a nearly straight or slightly curved ochreous-whitish transverse streak from $\frac{2}{3}$ of costa to dorsum before tornus, sometimes produced anteriorly along costa; apical area beyond this darker, with some undefined blackish marginal dots: cilia whitish-ochreous, base spotted with dark fuscous irroration. Hindwings grey; cilia pale grey; or whitish-ochreous tinged with grey.

Barberton (Janse); in December and January, four specimens. Differs from the normal structure of the genus in the absence of vein 7 of forewings, and the shorter terminal joint of palpi.

Brachmia velitaris, n. sp.

♂. 19 mm. Head, thorax, and abdomen whitish-ochreous. (Palpi broken.) Antennae serrate, ciliations 1. Forewings elongate, costa gently arched, apex obtuse, termen slightly sinuate, rather oblique; 2 and 3 stalked, 7 and 8 stalked; whitish-ochreous; costal edge dark fuscous towards base; a small flattened-triangular dark fuscous spot on costa beyond middle: cilia whitish-ochreous. Hindwings and cilia pale ochreous-yellowish.

Barberton (Miss Williams); in January, one specimen.

Brachmia apricata, n. sp.

♂ ♀. 14-16 mm. Head and thorax orange-yellow. Palpi ferruginous-yellow. Abdomen grey, anal tuft pale yellowish. Forewings elongate, rather narrow, costa slightly arched, faintly sinuate in middle, apex obtuse, termen straight, oblique; 2 and 3 stalked, 7 and 8 stalked; deep yellow, slightly ferruginous-tinged: cilia light yellowish. Hindwings grey; cilia whitish-ochreous tinged with grey.

Barberton, Waterval Onder (Janse); in November and January, two specimens.

Brachmia ochrostoma, n. sp.

♀. 13 mm. Head whitish-ochreous, crown tinged with grey posteriorly. Palpi whitish-ochreous, base dark fuscous, terminal joint and apex of second suffused with light grey. Thorax dark ashy-grey. Abdomen grey. Forewings elongate, narrow, costa gently arched, apex obtuse, termen very obliquely rounded; 2 and 3 stalked, 7 and 8 stalked; dark ashy-grey, veins and fold suffusedly streaked with black; plical and first discal stigmata indicated by small groups of whitish scales, plical obliquely before first discal; a larger whitish dot on fold near extremity; a few scattered whitish scales on apical part of costa and termen: cilia dark ashy-grey. Hindwings and cilia pale grey.

Barberton (Janse); in January, one specimen.

Brachmia pantheropa, n. sp.

♂ ♀. 12-13 mm. Head ochreous-yellow tinged with fuscous on crown. Palpi ochreous-yellow sprinkled with fuscous, terminal joint shorter than second. Antennal ciliations in ♂ 1. Thorax dark leaden-grey, somewhat sprinkled with light yellowish. Abdomen dark grey, anal tuft in ♂ pale yellowish. Forewings elongate, rather narrow, somewhat dilated posteriorly, costa slightly arched, apex obtuse, termen straight, rather oblique; 2 and 3 stalked, 7 and 8 long-stalked, 7 to apex; dark ashy-fuscous, slightly whitish-sprinkled; a slight pale ochreous dash beneath costa near base; a pale yellow-ochreous transverse blotch representing plical and first discal stigmata, reaching dorsum, more or less brownish-suffused except on margins; a blackish or dark brown spot representing second discal, sometimes edged with pale yellow-ochreous; a triangular suffused pale yellow-ochreous spot on costa at $\frac{3}{4}$, whence a very fine indistinct angulated line of pale ochreous scales runs to tornus: cilia dark fuscous sprinkled with whitish, base spotted with pale ochreous. Hindwings rather dark grey; cilia grey, base ochreous-whitish.

Barberton (Janse); in December, two specimens. Also one in my own collection from Pinetown, Natal, in January (Leigh).

Panicotricha, n. g.

Head above with long rough spreading hairs, face with appressed scales; ocelli absent, tongue short. Antennae $\frac{4}{5}$, basal joint moderate, without pecten. Labial palpi very long, slender, curved, ascending, second joint with appressed scales, terminal joint almost as long as second, acute. Maxillary palpi very short, filiform, appressed to tongue. Posterior tibiae clothed with rough hairs above. Forewings with 2 from near angle, curved, 2–5 approximated at base, 6 and 8 approximated, 7 absent, 11 from middle. Hindwings 1, trapezoidal, apex obtuse, termen slightly sinuate, cilia 1; 3 and 4 connate, 5 approximated, transverse vein very oblique, 6 and 7 stalked.

Allied to *Autosticha*; the rough scaling of head is quite peculiar.

Panicotricha prographa, n. sp.

♀. 15 mm. Head whitish. Palpi white, second joint pale brownish-ochreous except apex. Thorax ochreous-whitish. Abdomen pale ochreous-yellowish. Forewings elongate, rather narrow, costa moderate arched, apex obtuse, termen rounded, oblique; whitish-ochreous; discal stigmata small, black, at $\frac{1}{3}$ and $\frac{2}{3}$; posterior half of costa with four small slight very oblique ochreous-yellowish marks, last two accompanied with a few black specks: cilia ochreous-whitish, on costa towards apex with a basal line of black scales and subbasal dark fuscous line continued round apex as a yellowish line. Hindwings pale grey, apex and upper part of terminal edge whitish-ochreous; cilia whitish-ochreous.

Three Sisters (Janse); in March, one specimen.

Chelaria mancipata, n. sp.

♀. 13 mm. Head and thorax whitish sprinkled with grey. Palpi whitish, second joint with short apical tuft, grey-sprinkled, with two blackish bands, terminal joint with blackish basal ring and two subconfluent bands, with slight scale-projection above middle posteriorly. Abdomen grey. Forewings elongate, narrow, costa gently arched, apex obtuse, termen very obliquely rounded; 6 out of 7 below 8, to termen; grey, irregularly sprinkled with whitish, with scattered marks of black irroration; a black dot beneath costa near base; a small dark fuscous semioval spot on costa at $\frac{1}{4}$, and another smaller beyond it; an elongate dark grey spot on middle of costa; an elongate black mark edged with whitish on fold before middle, and between this and median costal spot an irregular elongate whitish ring; a whitish ring in disc at $\frac{3}{4}$, open beneath and its broken ends terminated with black scales: cilia grey, towards base barred with ochreous-whitish and dark grey. Hindwings grey, paler and thinly scaled anteriorly; cilia light grey.

Three Sisters (Janse); in February, one specimen.

Chelaria improba, n. sp.

♂. 13 mm. Head and thorax grey, patagia dark grey. Palpi whitish, second joint suffusedly irrorated with blackish, with moderate apical tuft, terminal joint with blackish basal ring and two bands confluent on a posterior scale-projection above middle. Abdomen grey. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded; 6 separate, to termen; light brownish, suffusedly mixed with grey; base narrowly dark grey sprinkled with black, dilated towards costa; a triangular patch of blackish suffusion extending on costa from $\frac{1}{4}$ to middle and reaching $\frac{2}{3}$ across wing; two superimposed incomplete rings of black scales in disc at $\frac{3}{4}$, upper very indistinct; a series of small indistinct spots of blackish irroration round posterior part of costa and termen: cilia grey, with darker subbasal shade. Hindwings and cilia grey.

Barberton (Janse); in December, one specimen.

Chelaria antisaris, n. sp.

♂. 14 mm. Head and thorax pale whitish-ochreous, sprinkled with grey except face. Palpi ochreous-whitish sprinkled with grey, second and terminal joints each with two bands of dark grey irroration, second joint with scales expanded towards apex above and forming a moderately long broad tuft beneath, terminal joint posteriorly with rough strongly projecting scales from base almost to apex. Abdomen grey. Forewings elongate, very narrow, costa slightly arched, apex obtuse-pointed, termen extremely obliquely rounded ; 6 separate ; pale greyish-ochreous irregularly and suffusedly irrorated with grey ; an indistinct blackish dot beneath costa near base ; an irregular patch of fuscous suffusion partially sprinkled with blackish in disc before middle, extended over costal $\frac{2}{3}$ of wing from middle to apex, raised spots of grey and whitish irroration on fold before middle of wing, and above tornus ; a curved-bent transverse line of silvery irroration towards apex, and another round apex : cilia pale greyish, round apex whitish-sprinkled, above apex with basal and median dark grey lines. Hindwings rather dark grey, with a pale subhyaline longitudinal median streak ; cilia pale greyish.

Barberton (Janse) ; in January, one specimen.

Chelaria probolaea, n. sp.

♀. 16 mm. Head and thorax brownish-whitish, crown with a grey central line, shoulders dark grey. Palpi ochreous-whitish, second joint with rough double tuft beneath, with two fuscous bands, terminal joint with dark fuscous subbasal ring, and median scale-projection tinged with fuscous. Abdomen pale greyish-ochreous mixed with fuscous. Forewings elongate, narrow, costa gently arched, apex obtuse, termen extremely obliquely rounded ; 7 and 8 out of 6, 6 to apex ; pale brownish, with some scattered dark fuscous scales ; a blackish streak beneath costa from base to $\frac{2}{5}$; a blackish line along fold from base to an elongate dark fuscous partially white-edged spot representing plical stigma, its basal portion traversing a larger dark fuscous spot ; a blackish line from above plical stigma through middle of disc to apex, interrupted beyond $\frac{2}{3}$ by an irregular dark fuscous spot edged laterally with whitish, and also obliquely cut with whitish in middle ; an undefined narrow patch of dark fuscous suffusion extending along median third of costa, terminated with whitish ; a streak of blackish suffusion from beneath extremity of this to costa before apex : cilia very pale brownish, round apex sprinkled and barred with dark fuscous. Hindwings dark grey, anteriorly with hyaline spaces between veins ; cilia grey.

Barberton (Janse) ; in January, one specimen.

Anarsia amalleuta, n. sp.

♂ ♀. 13-15 mm. Head whitish, more or less sprinkled with grey. Palpi grey irrorated with whitish, second joint with two blackish bands, terminal joint of ♀ whitish with broad blackish median band and fine subbasal ring. Thorax grey suffusedly irrorated with whitish. Abdomen light grey, anal tuft of ♂ ochreous-whitish. Forewings elongate, narrow, costa moderately arched, apex round-pointed, termen extremely obliquely rounded ; grey irrorated with white ; two short oblique blackish-grey marks on costa about $\frac{1}{4}$, an elongate narrow spot about middle, and two oblique marks beyond this ; a blackish streak beneath costa from base to middle, one in disc from near base to termen beneath apex, one submedian from base to termen above tornus, interrupted in middle, one from dorsum near base to tornus, obliquely interrupted before middle, and two short oblique ones towards costa posteriorly : cilia grey irrorated with whitish, towards base spotted with darker grey suffusion. Hindwings rather dark grey, becoming hyaline towards base ; cilia grey. Forewings in ♂ on under surface with long hair-pencil from base lying along median vein, covered by hindwings.

Three Sisters (Janse); in March, two specimens.

Anarsia ambitiosa, n. sp.

♂ ♀. 14-16 mm. Head grey-whitish. Palpi white, second joint blackish except towards apex, terminal joint of ♀ with blackish ring near base and band above middle. Thorax white mixed with grey, shoulders, a blotch on each side of back, and a posterior spot black. Abdomen light grey, anal tuft ochreous-whitish. Forewings elongate, narrow, costa gently arched, apex round-pointed, termen extremely obliquely rounded; grey-whitish, or grey irrorated with white, more or less sprinkled with black; markings fuscous suffusedly irrorated with black; a moderately broad subbasal fascia, dilated towards dorsum; a moderately broad irregular oblique median fascia, triangularly dilated on costa, connected with preceding fascia on dorsum and sometimes on fold also; an irregular apical patch, more or less connected dorsally with median fascia: cilia grey, sprinkled with whitish and towards base with blackish. Hindwings grey, paler and subhyaline anteriorly; cilia pale greyish.

Donkerhoek, Waterval Onder, Barberton (Janse); from October to December, six specimens.

Anarsia mitescens, n. sp.

♀. 13 mm. Head and thorax light grey irrorated with white. Palpi with second joint blackish, apical edge white sprinkled with grey, terminal joint white with blackish ring near base and two subconfluent above middle. Abdomen grey, apex ochreous-whitish. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen very obliquely rounded; light grey irrorated with whitish, with a few scattered black scales; an elongate dark grey spot in middle of costa, preceded by two small cloudy blackish spots and followed by two others; a black dot beneath costa near base, one on fold at $\frac{1}{4}$, one rather large in disc before middle, one on lower edge of median costal spot, one beneath costa at $\frac{2}{3}$, one in disc at $\frac{2}{3}$, one above dorsum before tornus, and several small groups of black scales towards apex: cilia light grey irrorated with whitish. Hindwings rather dark grey; cilia light grey.

Barberton (Janse); in December, one specimen.

Anarsia carbonaria, n. sp.

♀. 14-15 mm. Head light grey irrorated with white. Palpi with second joint black, apex grey irrorated with white, terminal joint somewhat thickened towards middle, white with black subbasal ring and supramedian band. Thorax dark grey or blackish, more or less sprinkled with white. Abdomen grey irrorated with white. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded; 6 closely approximated to 7 anteriorly; dark grey irregularly irrorated with white, with scattered black scales; basal half with several small scattered suffused blackish spots; an irregular transverse black blotch on middle of costa reaching $\frac{2}{3}$ across wing, followed by a patch of light grey suffusion with stronger white irroration extended to tornus; an oval black spot in disc at $\frac{3}{4}$; an oblique black mark between this and costa posteriorly, surrounded with dark suffusion; several suffused black dots towards costa posteriorly and termen: cilia grey irrorated with whitish, basal half mixed with blackish. Hindwings grey, paler and thinly scaled anteriorly; cilia pale greyish.

Barberton, Waterval Onder (Miss Williams, Janse); from November to January, three specimens.

Anarsia nimbosa, n. sp.

♀. 11-14 mm. Head and thorax whitish irrorated with fuscous, patagia suffusedly irrorated with dark fuscous. Palpi white irrorated with dark fuscous, second joint black except apex, terminal joint with two black rings. Abdomen grey. Forewings elongate, rather narrow, costa gently arched, apex round-pointed, termen extremely obliquely rounded; dark grey irregularly sprinkled with white, and strewn with black scales tending to form streaks on veins; sometimes a cloudy patch of dark suffusion on fold at $\frac{1}{4}$; an elongate cloudy blackish spot on middle of costa and a shorter one preceding it, tending to coalesce and merge in a very undefined triangular patch of dark suffusion extending from costa to fold: cilia grey, basal half sprinkled with blackish and whitish. Hindwings and cilia grey.

Three Sisters, Pretoria, Waterval Onder (Janse); in October, November, and March, five specimens.

Nothris tetrametra, n. sp.

♂ ♀. 9–11 mm. Head and thorax whitish-ochreous, shoulders with a blackish mark. Palpi with second joint dark fuscous, with moderately long projecting ochreous-brown tuft, apical margin rather broadly white, terminal joint white, with black median ring. Abdomen ochreous-whitish. Forewings elongate, narrow, costa gently arched, apex obtuse-pointed, termen very obliquely rounded; 6 sometimes out of 7 near base; pale yellow-ochreous, irregularly suffused or marbled with whitish sprinkled or finely irrorated with fuscous; four short oblique black marks on costa from $\frac{1}{5}$ to $\frac{2}{3}$; a black dot towards costa near base; a blackish dot beneath fold at $\frac{1}{5}$; stigmata small, black, plical rather obliquely before first discal; a small black dot above dorsum before tornus; several minute scattered black dots in apical area: cilia whitish-grey. Hindwings grey; cilia whitish-grey.

Barberton (Janse); in December and January, three specimens.

Nothris cymotrocha, n. sp.

♀. 12-13 mm. Head whitish-ochreous, with broad grey central stripe on crown. Palpi with second joint brownish-ochreous irrorated with blackish and on apical edge with whitish, scales triangularly expanded above and forming a moderate triangular tuft at apex beneath; terminal joint whitish, anterior edge sprinkled with blackish. Thorax pale ochreous with broad dark grey dorsal stripe, shoulders dark fuscous. Abdomen grey. Forewings elongate, narrow, costa slightly arched, apex pointed, termen very obliquely rounded; pale yellow-ochreous, with silvery iridescence; basal fourth of costa with small black marks; a dark fuscous streak along costa from $\frac{1}{4}$ to $\frac{3}{4}$, marked with one or two pale strigulae before middle, and triangularly expanded beyond middle; a broad dark fuscous streak along dorsum from base to tornus, upper edge forming two rounded undulations which reach half across wing, crest of first suffused with blackish; some scattered fuscous scales and slight suffusion in disc; second discal stigma small, black; a rather thick dark fuscous streak along termen from apex to near tornus, edged anteriorly with some blackish scales: cilia dark grey, on costa pale yellow-ochreous. Hindwings grey, paler and thinly scaled anteriorly; cilia pale grey, base whitish-ochreous.

Barberton, Three Sisters (Janse); in December and February, two specimens.

Nothris dissidens, n. sp.

♀. 19 mm. Head whitish-ochreous, crown centrally tinged with lilac-brown. Palpi ochreous-whitish, second joint with basal and supramedian oblique dark fuscous bands, thickened with dense scales forming a short triangular projection at apex beneath, terminal joint considerably thickened with scales, longer than second, base and two oblique subconfluent bands occupying apical $\frac{2}{3}$ dark fuscous. Thorax brownish. Abdomen grey, apex ochreous-whitish. Forewings elongate, narrow, costa gently arched, apex rounded-obtuse, termen rounded, oblique; brownish, sprinkled with dark fuscous; an undefined streak of whitish-ochreous suffusion extending from costa near base beneath costa to costa again near apex, enclosed costal space suffused with blackish-grey; a short oblique line of blackish scales almost from base of costa preceding this; some broad grey suffusion along fold, including a suffused blackish plical streak from near base to about middle of wing; discal stigmata dark grey, connected by an elongate fuscous spot, first edged with whitish-ochreous; terminal area suffused with grey, streaked with dark brown and blackish irroration on veins; undefined small blackish spots round apical part of costa and termen, preceded by small obscure pale ochreous spots: cilia fuscous sprinkled with ochreous-whitish, with two darker shades. Hindwings with apex obtuse, termen not sinuate; grey; cilia whitish-ochreous-grey, with grey subbasal shade.

Waterval Onder (Janse); in November, one specimen.

Trichotaphe ligyra, n. sp.

♂. 11 mm. Head and thorax bronzy-fuscous. Palpi with second joint ochreous tinged with fuscous, with triangular expansion of scales above towards apex and short apical projection beneath, terminal joint much longer than second, whitish, anterior edge irrorated with dark fuscous. Abdomen dark grey. Forewings elongate, narrow, costa slightly arched, faintly sinuate in middle, apex obtuse-pointed, termen very obliquely rounded; bronzy-fuscous, costal edge dark fuscous; a more or less developed oblique dark fuscous streak from costa near base, reaching half across wing; an irregular blackish-fuscous fascia beyond $\frac{1}{3}$, edged with pale yellowish, anterior edge straight, posterior convex, broadest in middle, where it is centrally suffused with ground colour, hardly reaching costa; an oblique blackish-fuscous fascia from middle of costa, edged with pale yellowish, centrally suffused with ground colour in disc, reaching $\frac{2}{3}$ across wing, its apex obliquely truncate; a slightly incurved pale yellowish streak from $\frac{3}{4}$ of costa to dorsum before tornus, edged posteriorly by a blackish-fuscous streak; some suffused dark fuscous dots round posterior part of costa and termen : cilia fuscous. Hindwings grey, thinly scaled in cell, veins and margins suffused with dark fuscous ; cilia grey.

Pretoria (Janse) ; in November, two specimens.

Trichotaphe physeta, n. sp.

♂. 14-16 mm. Head, palpi, and thorax dark purplish-fuscous, second joint of palpi above clothed with long dense expansible scales sprinkled with whitish points, terminal joint shorter than second. Abdomen dark grey. Forewings elongate, costa gently arched, faintly sinuate in middle, apex obtuse, termen obliquely rounded ; dark purplish-fuscous ; stigmata indistinct, cloudy, blackish, plical hardly before first discal ; indistinct blackish dots round posterior part of costa and termen : cilia grey. Hindwings roughly hairy on dorsal $\frac{2}{3}$ from base to beyond middle ; dark fuscous ; cilia grey.

Barberton, Three Sisters (Janse) ; in December and March, two specimens.

Trichotaphe plumbosa, n. sp.

♂ ♀. 17-18 mm. Head, thorax, and abdomen rather dark fuscous. Palpi with second joint dark fuscous, scales triangularly expanded above and slightly at apex beneath, apical edge whitish, terminal joint whitish, anterior edge suffused with dark fuscous. Forewings elongate, rather narrow, costa gently arched, faintly sinuate in middle, apex obtuse, termen obliquely rounded ; rather dark slaty-fuscous, with a few scattered black scales ; a cloudy dark fuscous transverse dot above fold at $\frac{1}{4}$; stigmata cloudy, dark fuscous, plical somewhat obliquely before first discal ; a whitish dot on costa at $\frac{2}{3}$, whence a very faint pale slightly curved shade crosses wing ; some black dots round posterior part of costa and termen : cilia grey. Hindwings rather dark grey ; cilia grey, darker towards base.

Barberton, Three Sisters (Janse) ; in December and March, two specimens.

Trichotaphe oxygrapha, n. sp.

♂ ♀. 14-16 mm. Head and thorax purplish-grey, face, sides of crown, and shoulders ochreous-whitish. Palpi with second joint dark fuscous, scales triangularly expanded above towards apex, apical edge white, terminal joint whitish, anterior edge suffused with dark fuscous. Abdomen in ♂ pale greyish-ochreous, in ♀ grey. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen slightly rounded, oblique ; dark grey, with slight bluish or purplish tinge ; costal edge ochreous-white from base to $\frac{2}{3}$, marked at base with a black dot ; a large cloudy dark fuscous sometimes transverse dot in disc at $\frac{1}{4}$; stigmata rather large, cloudy, dark fuscous, plical somewhat obliquely before first discal, both these sometimes followed by one or two white scales, second discal transverse ; an ochreous-whitish dot on costa at $\frac{3}{4}$, whence a fine zigzag line of whitish scales runs to tornus, sometimes hardly traceable ; a series of blackish dots round apical portion of costa and termen : cilia grey, base dotted with whitish suffusion. Hindwings rather dark grey ; cilia grey.

Barberton (Janse) ; in December and January, four specimens.

Trichotaphe rubidula, n. sp.

♀. 17 mm. Head and thorax fuscous. Palpi with second joint dark fuscous, scales triangularly expanded above and somewhat at apex beneath, apical edge whitish, terminal joint whitish, anterior edge irrorated with dark fuscous. Abdomen grey. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen nearly straight, rather oblique, 7 to apex ; fuscous sprinkled with reddish-brown, with a few black scales ; costal edge whitish-ochreous from near base to beyond middle ; stigmata dark fuscous, plical beneath first discal ; an indistinct pale greyish-ochreous nearly straight transverse shade at $\frac{3}{4}$, slightly indented above middle : cilia fuscous tinged with purple-reddish. Hindwings grey ; cilia light grey.

Barberton (Janse) ; in January, one specimen.

Dichomeris antizyga, n. sp.

♂. 13-14 mm. Head light grey irrorated with whitish, sides of crown light yellowish. Palpi with second joint dark grey sprinkled with whitish, scales triangularly expanded towards apex above and forming a long projecting tuft beneath, terminal joint whitish, anterior edge blackish. Thorax pale ochreous-yellowish, shoulders dark fuscous. Abdomen whitish-grey. Forewings elongate, narrow, costa gently arched, apex pointed, termen very obliquely rounded ; yellow-ochreous ; base of costa dark fuscous ; a small blackish dot in disc at $\frac{1}{4}$; stigmata moderate, black, plical slightly beyond first discal, second discal connected with dorsum by some pale greyish suffusion ; a short blackish-grey streak from apex along upper part of termen : cilia ochreous-yellowish. Hindwings light grey ; cilia whitish-ochreous slightly tinged with grey.

Barberton, Pretoria (Janse) ; in January and April, two specimens.

Dichomeris metrodes Meyr.

Moorddrift (Swierstra) ; in October, one specimen. Occurs also in India and Ceylon, but not previously recorded from Africa.

Dichomeris cotifera, n. sp.

♂. 15 mm. Head grey, sides of crown whitish-ochreous, face white. Palpi with second joint dark fuscous, with scales triangularly dilated above and forming a moderate projecting tuft beneath, apical edge whitish, terminal joint whitish, anterior edge blackish. Thorax pale ochreous, with grey dorsal stripe, shoulders dark grey. Abdomen grey. Forewings elongate, narrow, costa gently arched, apex obtuse-pointed, termen hardly rounded, oblique ; light ochreous-yellowish ; costal edge suffused with dark grey from base to $\frac{2}{3}$; a dark purplish-grey dorsal band from base to termen, streaked with blackish on veins, occupying about half of wing, broadest posteriorly and reaching apex, upper portion suffused with dark brown towards base and posteriorly, upper edge forming a triangular projection before middle of wing, beyond this with an excision containing a spot of brown suffusion ; some scattered black scales and brownish suffusion on veins on costal half of wing posteriorly : cilia light ochreous-yellowish, on tornus tinged with grey. Hindwings and cilia grey.

Barberton (Janse) ; in December, one specimen.

Dichomeris ventosa, n. sp.

♂ ♀. 12-14 mm. Head shining submetallic ochreous-whitish. Palpi with second joint dark fuscous, scales expanded above towards apex and with moderate triangular tuft beneath, apical edge whitish, terminal joint whitish with dark fuscous subapical band. Antennal ciliations in ♂ 2. Thorax ochreous-whitish, sometimes sprinkled with dark fuscous posteriorly, shoulders narrowly dark fuscous. Abdomen ochreous-whitish sprinkled with grey. Forewings elongate, rather narrow, costa gently arched, faintly sinuate in middle, apex obtuse, termen almost straight, rather strongly oblique; fuscous-whitish, irregularly mixed with dark fuscous except towards anterior half of costa; a suffused dark fuscous spot on base of costa; a flattened-triangular suffused dark fuscous patch on costa beyond middle; stigmata blackish, first discal largest, plical beneath first discal; the dark fuscous suffusion sometimes forms an irregular patch in disc before these; a rather narrow suffused dark fuscous terminal fascia: cilia whitish, basal third spotted with dark fuscous suffusion, with a grey postmedian line. Hindwings light grey; cilia ochreous-whitish, with grey subbasal shade.

Barberton, Three Sisters (Janse); in December and March, seven specimens.

Dichomeris argentaria, n. sp.

♂ ♀. 13-14 mm. Head whitish-grey. Palpi with second joint blackish, tuft strong, triangular, apical edge white sprinkled with grey, terminal joint much longer than second, white, anterior edge black. Antennal ciliations in ♂ 2. Thorax ochreous-yellowish with grey central stripe, shoulders dark fuscous. Abdomen grey. Forewings elongate, narrow, costa slightly arched, apex obtuse-pointed, termen very obliquely rounded; light yellow-ochreous; costal edge slenderly suffused with dark fuscous from base almost to apex, beneath this with a faint pale iridescent-silvery streak from base to $\frac{2}{3}$; a similar slender silvery streak along fold from base to $\frac{1}{4}$, and two silvery streaks from costa before and beyond middle converging towards dorsum beyond middle; dorsal area beneath fold deep ferruginous, paler towards base, dorsum suffused with dark fuscous on posterior half; a dark brown trapezoidal blotch resting on dorsum and reaching half across wing, its upper edge excavated, corners of excavation marked with two black dots; a slender dark grey terminal fascia crossed by four black marks: cilia leaden-grey, with black subbasal line, on costa whitish-ochreous. Hindwings grey, rather darker posteriorly; cilia grey.

Barberton (Miss Williams, Janse); in December and April, two specimens.

Dichomeris picrophanes, n. sp.

♀. 15 mm. Head and thorax silvery white, sides of face dark fuscous, patagia suffused with fuscous. Palpi with second joint very long, straight, porrected, triangularly rough-scaled above and with rough projecting apical tuft beneath, fuscous sprinkled with dark fuscous, apical edge white, terminal joint shorter, white, anterior edge blackish. Abdomen ochreous-grey-whitish. Forewings elongate, rather narrow, costa gently arched, apex pointed, termen very obliquely rounded; silvery-white, dorsal half tinged and sprinkled with pale fuscous; a moderately broad dark fuscous median longitudinal streak from base to apex, lower edge somewhat suffused: cilia silvery-whitish. Hindwings whitish-grey; cilia grey-whitish.

Barberton (Janse); in December, one specimen.

Dichomeris oleata, n. sp.

♂ ♀. 14-16 mm. Head and thorax pale ochreous tinged with grey. Palpi with scales of second joint expanded above towards apex and with long triangular tuft beneath, dark grey sprinkled with whitish, terminal joint whitish, anterior edge dark fuscous. Abdomen pale grey, sides and apex whitish-ochreous. Forewings elongate, rather narrow, costa gently arched, faintly sinuate in middle, apex obtuse, termen slightly rounded, oblique; brownish-ochreous, more or less irrorated with fuscous; costal edge dark fuscous at base and more or less suffused with dark fuscous towards median third; sometimes a dark fuscous dot above fold at $\frac{1}{4}$; stigmata dark fuscous, plical slightly before first discal, an additional dot close before and above first discal, second discal transverse, sometimes connected with dorsum by a transverse patch of fuscous suffusion; a narrow streak of dark fuscous suffusion along termen: cilia ochreous, base indistinctly dotted with dark fuscous. Hindwings with pecten of hairs on lower margin of cell towards base; pale grey; cilia whitish-ochreous.

Barberton, Three Sisters (Janse); in December and March, two specimens.

Dichomeris impigra, n. sp.

♂ ♀. 15-17 mm. Head grey, sides of crown sometimes pale ochreous. Palpi with scales of second joint expanded above and forming a long triangular tuft beneath, blackish, irrorated with whitish along apical edge, terminal joint white, anterior edge blackish. Thorax pale ochreous, sometimes with greyish dorsal suffusion. Abdomen dark grey. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen nearly straight, oblique; ochreous, more or less sprinkled with fuscous except towards costa anteriorly; costal edge black towards base; stigmata black, plical rather obliquely before first discal; a moderate dark grey terminal fascia, sprinkled with black, anterior edge slightly convex, suffused with black and preceded by a clear ochreous shade: cilia ochreous, on termen suffused with grey. Hindwings dark grey; cilia grey.

Barberton (Janse), Haenertsburg (Swierstra); in December and January, four specimens. I have previously regarded this as a form of *tephrodes*, but now think it distinct.

Dichomeris xanthodeta, n. sp.

♂. 16-17 mm. Head and thorax lilac-fuscous, face and upper part of orbits whitish, sides brownish-orange. Palpi brownish-orange, second joint triangularly rough-scaled above and with rather short apical tuft beneath, apical edge white sprinkled with fuscous, terminal joint white, anterior edge blackish. Abdomen fuscous, sides and apex ochreous-yellowish. Forewings elongate, rather narrow, somewhat dilated, costa gently arched, apex obtuse, termen sinuate, somewhat oblique, 7 to apex lilac-fuscous; costa narrowly deep orange throughout; a dark fuscous terminal line: cilia light yellow-ochreous, on tornus fuscous. Hindwings grey; cilia ochreous-yellowish, on lower part of termen and dorsum tinged with pale fuscous.

Three Sisters (Janse); in February, two specimens.

Strenophila, n. g.

Head smooth; ocelli present; tongue developed. Antennae $\frac{3}{4}$, in ♂ ciliated, basal joint elongate, with slight pecten. Labial palpi very long, recurved, with appressed scales, terminal joint longer than second, acute. Maxillary palpi very short, filiform, appressed to tongue. Posterior tibiae clothed with long hairs above. Forewings with 2 from towards angle, 7 and 8 stalked, 7 to costa, 11 from middle. Hindwings $\frac{2}{3}$, lanceolate, cilia 3; 3 and 4 short-stalked, 5 parallel, 6 and 7 long-stalked.

A curious form, probably allied to *Symmoca*.

Strenophila hyptiota, n. sp.

♂ ♀. 13-14 mm. Head and thorax ochreous-whitish, shoulders narrowly blackish. Palpi white, basal half of second joint, and two rings of terminal blackish. Antennae dark grey. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, narrow, costa slightly arched, apex pointed, termen extremely obliquely rounded; ochreous-white, with a few scattered brownish and blackish scales; markings purple-blackish; an almost basal fascia, on costa extending to $\frac{1}{5}$, dilated downwards, on dorsum extending nearly to middle of wing; a semioval patch extending nearly over median third of costa and reaching half across wing; stigmata black, discal nearly approaching costal patch before and behind, plical beneath first discal, forming part of subbasal fascia; an irregular terminal fascia, broadest on costa and narrowed downwards, extending over tornus to beneath middle of costal patch: cilia ochreous-whitish, towards tornus greyish-tinged, on costa dark fuscous. Hindwings grey; cilia pale greyish.

Waterval Onder (Janse); in November, four specimens.

COSMOPTERYGIDAE.

Cosmopteryx macroglossa, n. sp.

♂. 14-15 mm. Head ochreous-bronze, crown with white central and lateral lines, lower part of face white. Palpi white, lined with black. Antennae grey, towards base white lined with black, apical third suffusedly ringed with whitish. Thorax ochreous-bronze with three white lines. (Abdomen broken.) Forewings very narrowly lanceolate, apex extremely long and slenderly caudate, forming $\frac{1}{3}$ of entire wing; bronzy-ochreous; a fine white costal streak from base to band, costal edge dark fuscous from base to $\frac{1}{3}$ of wing; a slender white median streak reaching from base to band; a white subdorsal line from $\frac{1}{4}$ to band, converging to apex of median streak; dorsal edge white from base to band; a narrow pale ochreous-yellow median band, anterior edge marked with two pale golden-metallic spots, upper followed by a black dot and then by a fuscous mark interrupting band, posterior edge suffusedly margined with silvery followed by pale yellow, whence a white streak at first rather broad but soon becoming narrower runs along termen to apex: cilia pale greyish-ochreous, on costa white except towards apex. Hindwings and cilia pale grey.

Waterval Onder, Pretoria (Janse); in November and March, two specimens. In this species the caudate apex of forewings reaches the extreme of development.

Cosmopteryx callinympha, n. sp.

♀. 12 mm. Head ochreous-bronzy, crown with white central and lateral lines, face whitish. Palpi white lined with dark fuscous. Antennae fuscous towards base (broken). Thorax ochreous-bronze with three white lines. Abdomen ochreous-whitish. Forewings narrowly lanceolate, apex slenderly long-produced, caudate; bronzy-ochreous; costal and dorsal edges white from base to band; a white subcostal line almost from base to band, touching costa anteriorly; a white median line from base to band; a white subdorsal line from $\frac{1}{4}$ to band; a broad irregular-edged orange band extending from before middle to $\frac{2}{3}$, containing four golden-metallic spots, viz., two dorsal, one subcostal beyond first dorsal, edged posteriorly with a black speck, and one costal above second dorsal; a white streak from band along termen to apex: cilia pale greyish-ochreous, on costa white except towards apex. Hindwings whitish; cilia pale whitish-ochreous.

Pretoria (Janse); in February, one specimen.

Cosmopteryx ancistraea, n. sp.

♂. 10 mm. Head bronzy-blackish, crown with white central and lateral lines, face white. Palpi white lined with blackish. Antennae towards base white lined with black (broken). Thorax bronzy-blackish with three fine white lines. Abdomen whitish-ochreous. Forewings very narrowly elongate-lanceolate, apex long-produced, caudate; bronzy-blackish; a silvery-white subcostal line from base, not nearly reaching band, inclined downwards posteriorly; a silvery-white median line from base almost to a projection of band; a white subdorsal line from $\frac{1}{4}$ to projection of band; dorsal edge white from base to $\frac{1}{3}$ of wing; costal edge shortly white before band; a rather broad light ochreous-yellowish median band, somewhat narrowed dorsally, anterior edge marked with two golden-metallic spots, upper wholly anterior to lower, followed by a black dot, edge forming a projection between these, posterior edge marked with two opposite golden-metallic spots, lower preceded by a black speck, between these suffusedly projecting and giving rise to a white streak which soon becomes terminal and runs to apex: cilia grey-whitish, greyer towards apex. Hindwings light grey; cilia grey-whitish.

Barberton (Janse); in December, one specimen.

Stagmatophora pilana, n. sp.

♂. 13 mm. Head white. Palpi white, second joint thickened with rather projecting scales beneath towards apex, dark fuscous except towards apex, terminal joint with apical $\frac{2}{3}$ blackish. Thorax blackish, with broad white dorsal stripe. Abdomen pale ochreous-grey. Forewings extremely narrowly elongate, long-pointed, acute; dark purplish-fuscous; a slender irregular white streak along dorsum from base to beyond tornus, posteriorly partially suffused with brownish-ochreous, edged above by two raised black dots at $\frac{1}{4}$, and middle of wing, second edged anteriorly with white; a short black apical dash, partially edged above with white: cilia pale greyish, sprinkled with dark fuscous, with a blackish subapical line, at apex with a dark fuscous bar, towards tornus suffused with ochreous-whitish. Hindwings grey, thinly scaled towards base; cilia light grey.

Barberton (Janse); in December, one specimen.

Stagmatophora trimitra, n. sp.

♀. 9-10 mm. Head and thorax dark bronzy-fuscous, sides of face with a fine white line. Palpi white, second joint with black subapical ring, terminal joint lined with black. Antennae black spotted with white, towards apex with a white band and white rings above and below it. Abdomen black. Forewings narrow-lanceolate, apex somewhat produced, acute; very dark bronzy-fuscous; a short silvery-white streak from base of costa along submedian fold; three fine silvery-white transverse fasciae, first at $\frac{1}{4}$, somewhat oblique, second median, direct, third at $\frac{3}{4}$, direct, but with extremities produced outwards in cilia; a silvery-white apical dot: cilia dark fuscous. Hindwings and cilia dark fuscous.

Barberton (Janse); in December, two specimens.

Limnoecia antidesma, n. sp.

♂. 6 mm. Head and palpi dark purplish-fuscous, face shining whitish. Palpi whitish, anterior edge of terminal joint blackish. Abdomen dark fuscous, sides and apex whitish. Forewings lanceolate; dark purplish-fuscous; two rather narrow straight direct transverse ochreous-white fasciae towards base and at $\frac{2}{3}$ respectively: cilia ochreous-whitish, round apex suffused with dark purplish-fuscous. Hindwings grey, suffused with blackish on median third; cilia ochreous-whitish.

Three Sisters (Janse); in February, three specimens.

Cholotis nudicornis, n. sp.

♂ ♀. 8-11 mm. Head and thorax shining dark bronzy-fuscous, face paler. Palpi dark fuscous, pale sprinkled, terminal joint as long as second. Antennae fuscous, in ♂ slender, simple, basal joint dark fuscous, pale-sprinkled. Abdomen grey. Forewings lanceolate, apex somewhat produced, acute; glossy dark bronzy-fuscous, bases of scales paler; plical and second discal stigmata obscure, dark fuscous, sometimes obsolete: cilia grey, mixed with dark fuscous round apex. Hindwings and cilia grey.

Pretoria, Barberton, Three Sisters (Janse); in December and March, three specimens. This is the species formerly wrongly identified by me as the Australian *semnostola*; it is extremely similar, but differs by the antennae of ♂, which in *semnostola* are somewhat stout and obviously ciliated.

Cholotis pulverata, n. sp.

♂ ♀. 8-12 mm. Head, palpi, and thorax dark bronzy-grey, finely sprinkled with whitish, face lighter. Antennae grey, in ♂ slender, simple, basal joint whitish-sprinkled. Abdomen grey. Forewings lanceolate, acute; dark grey with a slight purplish tinge, finely sprinkled with whitish; plical and second discal stigmata dark fuscous, sometimes rather large: cilia grey, sprinkled with whitish round apex. Hindwings and cilia grey.

Barberton, Waterval Onder, Three Sisters (Janse); in November, December, February, and March, thirteen specimens.

Parathystas, n. g.

Head smooth; ocelli absent; tongue developed. Antennae $\frac{5}{6}$, in ♂ simple, basal joint very long, slender, without pecten. Labial palpi very long, slender, smooth, recurved, terminal joint as long as second, acute. Maxillary palpi obsolete. Posterior tibiae smooth, at apex with a few long projecting scales. Forewings with 2 from towards angle, 7 and 8 stalked, 7 to costa, 11 from beyond middle. Hindwings 1$\frac{3}{5}$, narrow-lanceolate, cilia 3; 2–5 parallel, 6 and 7 approximated at base.

Parathystas porphyrantha, n. sp.

♂. 12 mm. Head and thorax dark purplish-bronze (face denuded). Palpi whitish-yellowish. Antennae dark grey, apical fourth white. Abdomen dark grey. Forewings elongate-lanceolate, acute; dark bronzy-fuscous; basal and apical patches, and a median fascia of bright coppery-purple suffusion; three small white spots, viz., one almost basal in middle, one on fold before $\frac{1}{3}$, and one on costa in middle, and two or three white scales above tornus: cilia dark bronzy-fuscous. Hindwings and cilia dark fuscous.

Barberton (Janse); in December, one specimen. Not in good condition, but distinct.

MOMPHIDAE.

Pauroptila, n. g.

Head with appressed scales; ocelli absent; tongue developed. Antennae $\frac{5}{6}$, basal joint elongate, without pecten. Labial palpi long, recurved, second joint thickened with scales, somewhat projecting at apex beneath, terminal joint thickened with scales, somewhat shorter than second, pointed. Maxillary palpi rudimentary. Posterior tibiae clothed with long hairs above. Forewings with tufts of scales; 2 from angle, 4 absent, 7 to costa, 8 absent, 11 from middle. Hindwings $\frac{1}{2}$, linear-lanceolate, cilia 5; 2–5 parallel, 6 and 7 approximated at base.

Allied to *Microcolona*.

Pauroptila galenitis, n. sp.

♀. 14-15 mm. Head and thorax pale yellowish, shoulders and sides of crown brownish. Palpi ochreous-whitish, second joint irrorated with dark grey except towards apex, terminal joint with two rings of dark grey irroration. Abdomen whitish-ochreous. Forewings elongate-lanceolate; pale yellowish, with some scattered silvery scales, and some veins irregularly sprinkled or suffused with light brownish, especially along costa; small undefined spots of blackish irroration on dorsum near base and before tornus, and on costa at $\frac{2}{3}$, praetornal followed by a small silvery spot; stigmata sometimes indicated by blackish irroration, plical obliquely before first discal; some indistinct dots of blackish irroration on margins towards apex: cilia pale greyish-fulvous, on costa pale yellowish. Hindwings and cilia grey.

Barberton (Janse); in December, two specimens.

Microcolona omphalias, n. sp.

♂ ♀. 10-11 mm. Head and thorax ochreous-whitish, spotted with brownish-ochreous suffusion. Palpi ochreous-whitish, second joint with a band of blackish irroration, terminal joint with two undefined rings of blackish irroration. Abdomen grey-whitish. Forewings elongate-lanceolate, apex somewhat produced, very acute, 7 and 8 separate; yellow-ochreous tinged with fulvous, sometimes irrorated with fuscous; a round tuft beneath costa before middle (first discal stigma), obscurely edged with ochreous-whitish; a blackish tuft on fold preceding this (plical stigma), followed by more or less blackish irroration towards dorsum; a large raised tuft beyond $\frac{2}{3}$ (second discal stigma), partially mixed with blackish and ochreous-whitish; some blackish irroration towards apex: cilia whitish-ochreous, round costa yellow-ochreous. Hindwings and cilia light grey or whitish-grey.

Barberton, Three Sisters (Janse); in December and February, two specimens.

Trachydora rhachitis, n. sp.

♂. 13-16 mm. Head yellow-whitish. Palpi white, second joint suffusedly irrorated with blackish except towards apex, with rough spreading apical tuft, terminal joint somewhat sprinkled with grey, with two slight projections of loose scales posteriorly. Thorax yellow-whitish, patagia dark brown. Abdomen light grey, two basal segments with a pale yellowish dorsal patch surrounded by some dark fuscous scales. Forewings elongate-lanceolate, acute; very dark brown, with scattered transverse tufts of blackish grey scales tipped with whitish; a rather broad ochreous-whitish stripe, partially tinged with ochreous-yellowish, running along dorsum and tornus from base to near apex; a streak of leaden-grey suffusion from $\frac{1}{3}$ of costa to near apex, and sometimes a streak in disc anteriorly: cilia ochreous-whitish, towards tornus greyish-tinged, on costa dark grey irrorated with whitish. Hindwings grey; cilia light grey; anterior half of costa with a fringe of very long expansible hairs lying beneath forewings.

Three Sisters (Janse); in February and March, two specimens.

STATHMOPODIDAE.

Pachyrhabda triplecta, n. sp.

♂. 10 mm. Head and thorax whitish-yellowish. Palpi whitish, second joint dark fuscous posteriorly except towards apex. Antennae whitish. Abdomen ochreous-whitish. Posterior legs ochreous-whitish, base of tarsal joints dark grey. Forewings very narrowly elongate, long-pointed, acute; whitish-yellowish, whiter towards costa posteriorly; costal edge blackish on basal third; a suffused light yellow-brownish streak along fold from near base to $\frac{2}{5}$ of wing, an elongate spot rather towards costa in middle of wing, and another in disc about $\frac{3}{4}$: cilia whitish-yellowish. Hindwings and cilia ochreous-whitish.

Barberton (Janse); in January, one specimen.

Stathmopoda pomifera, n. sp.

♂ ♀. 10–11 mm. Head and thorax dark purplish-fuscous. Palpi whitish, anterior edge of terminal joint dark fuscous. Abdomen dark grey, beneath white, anal tuft of ♂ grey mixed with white. Posterior legs with whorls of long bristles at origin of spurs and apex of first joint of tarsus.

Forewings very narrow, widest near base, thence narrowed to acute apex; dark purplish-fuscous; two rather broad orange transverse fasciae, first towards base, anterior edge with triangular prominence below middle, posterior edge incised in middle, second beyond middle, not quite reaching costa except at its posterior angle which is whitish: cilia rather dark fuscous. Hindwings dark fuscous; cilia rather dark fuscous.

Wonderboom, Barberton (Swierstra, Janse); in December and May, two specimens.

Stathmopoda arcata, n. sp.

♂. 14 mm. Head and thorax orange-yellow, face whitish-tinged, back of crown, collar, and shoulders bronzy fuscous. Palpi whitish, terminal joint dark fuscous anteriorly towards apex. Abdomen prismatic grey-whitish. Posterior tibiae with apical whorl of long bristles. Forewings extremely narrow, widest near base, thence narrowed to acute apex; rather dark bronzy-grey; base of dorsum whitish-ochreous; a whitish-ochreous trapezoidal blotch extending along dorsum from before $\frac{1}{6}$ to $\frac{1}{3}$, reaching to fold, centrally suffused with yellow-ochreous; a smaller elongate whitish-ochreous spot on dorsum beyond middle, edged above by a slender suffused ochreous streak running through median third of disc; apex of wing obscurely suffused with whitish-ochreous: cilia whitish-ochreous, tinged with yellowish towards base. Hindwings grey; cilia whitish-ochreous.

Barberton (Janse); in December, one specimen.

Stathmopoda autoxantha, n. sp.

♂ ♀. 12-13 mm. Head and thorax orange-yellow, face shining ochreous-whitish. Palpi pale yellowish. Abdomen grey, banded with yellowish. Forewings elongate, narrow, widest near base, thence narrowed to pointed apex; orange-yellow; costal edge blackish on basal third: cilia ochreous-yellow, paler towards tornus. Hindwings grey; cilia pale greyish-ochreous, at apex yellowish-tinged.

Barberton (Janse); in December, two specimens.

Aeoloscelis tripoda, n. sp.

♂ ♀. 11-12 mm. Head shining whitish-ochreous, back of crown ferruginous-yellow. Palpi ochreous-whitish. Thorax ochreous-yellow. Abdomen whitish-yellowish. Forewings lanceolate, acute; ochreous-yellow; markings rather dark fuscous; a dot on base of costa; a transverse line near base, widely interrupted in disc; a fascia before middle, narrow on costa, triangularly dilated downwards and furcate on dorsum; a slender subterminal fascia from costa before apex to tornus, sending a short branch to middle of termen: cilia ochreous-yellow, becoming paler and suffused with grey towards tornus. Hindwings light grey; cilia whitish-ochreous tinged with grey.

Barberton (Janse); in December, two specimens.

SCYTHRIDAE.

Paralogistis, n. g.

Head with appressed scales; ocelli absent; tongue developed. Antennae $\frac{5}{6}$, basal joint moderate, with pecten of scales. Labial palpi rather short, curved, ascending, with appressed scales, terminal joint shorter than second, cylindrical, obtuse. Maxillary palpi obsolete. Thorax with erect posterior crest. Posterior tibiae clothed with long hairs. Forewings with 2 from angle, 6 and 7 stalked, 7 to costa, 8 absent, 11 from middle. Hindwings under 1, lanceolate, cilia $1\frac{1}{2}$; 3 from angle, 4 and 5 short-stalked from angulation of transverse vein, 6 and 7 parallel.

Paralogistis ochrura, n. sp.

♀. 17 mm. Head, palpi, and thorax grey-whitish irrorated with blackish. Abdomen pale yellow-ochreous, last two segments deeper yellow-ochreous. Forewings elongate-lanceolate; grey-whitish finely irrorated with blackish; markings formed of coarser black irroration, viz., some undefined suffusion towards base of costa, a dot beneath fold at $\frac{1}{5}$, an irregular raised transverse mark from dorsum before middle of wing reaching somewhat beyond fold, and a round submedian dot above tornus: cilia pale greyish-ochreous, towards base mixed with white and sprinkled with blackish specks. Hindwings grey; cilia pale greyish-ochreous.

Donkerhoek (Janse); in October, one specimen.

Scythris psamathota, n. sp.

♂. 12 mm. Head and thorax pale ochreous mixed with white. Palpi ochreous-whitish. Abdomen grey-whitish, anal tuft whitish-ochreous. Forewings elongate, narrow, costa slightly arched, apex acute, termen somewhat sinuate, extremely oblique; whitish-ochreous: cilia concolorous. Hindwings with 5 absent; grey; cilia light grey.

Waterval Onder (Janse); in November, one specimen.

Scythris farrata, n. sp.

♂. 12–13 mm. Head whitish-ochreous. Palpi ochreous-whitish, second joint fuscous except apex. Thorax whitish-ochreous, more or less suffused anteriorly with fuscous or dark fuscous. Abdomen whitish-ochreous. Forewings lanceolate; whitish-ochreous or greyish-ochreous, more or less coarsely sprinkled with dark fuscous, anterior half of costa sometimes suffused with dark fuscous; plical and second discal stigmata rather large, dark fuscous, plical connected with dorsum by a slightly oblique bar of dark fuscous suffusion: cilia whitish-ochreous, sprinkled with dark fuscous towards base. Hindwings with 5 absent; grey; cilia pale greyish-ochreous.

Three Sisters (Janse); in February and March, four specimens.

Scythris canispersa, n. sp.

♂. 16 mm. Head and thorax light bronzy-fuscous, somewhat mixed with whitish. Palpi white, mixed with dark fuscous externally. Abdomen grey, ventral surface suffused with ochreous-whitish except towards base, anal tuft whitish-ochreous. Forewings elongate-lanceolate, acute; rather light bronzy-fuscous; some irregular indistinct whitish suffusion towards base of dorsum, along fold, and on apical third; stigmata darker fuscous, indistinct, first discal beyond middle, approximated to second, plical very obliquely before first discal: cilia ochreous-grey, mixed with white towards base. Hndwings with 4 and 5 stalked; rather dark grey; cilia ochreous-grey.

Pretoria (Janse); in April, one specimen.

Scythris lactanea, n. sp.

♂. 13-14 mm. Head, palpi, thorax, and abdomen ochreous-whitish. Forewings elongate, narrow, costa gently arched, apex acute, termen subsinuate, extremely oblique ; light fuscous, almost wholly suffused with ochreous-whitish except a more or less developed subcostal band ; obscure fuscous dots towards dorsum at $\frac{1}{3}$ and middle, and above tornus ; a suffused dark fuscous dot on fold between the two former ; plical stigma suffused, dark fuscous, second discal round, distinct, dark fuscous : cilia ochreous-grey. Hindwings with 4 and 5 stalked ; grey ; cilia ochreous-grey.

Pretoria, Barberton (Janse) ; in December, January, and March, three specimens.

Scythris sacharissa, n. sp.

♂. 13 mm. Head grey, sides rosy-ochreous-whitish. Palpi whitish, anteriorly dark fuscous. Thorax rosy-ochreous-whitish, slightly greyish-tinged centrally and anteriorly. Abdomen ochreous-whitish tinged with grey. Forewings elongate, narrow, costa gently arched, apex acute, termen faintly sinuate, extremely oblique ; rather dark grey ; a broad rosy-ochreous-whitish median longitudinal streak from base to termen, emitting a fine line beneath from beyond its middle ; veins on costal area above this marked by fine rosy-ochreous-whitish lines ; similar indistinct dorsal and subdorsal lines, confluent towards base, but becoming obsolete posteriorly : cilia rather dark grey, on costa ochreous-white. Hindwings with 4 and 5 stalked ; rather dark grey, darker posteriorly ; cilia ochreous-grey.

Pretoria (Miss S. Viljoen) ; in January, one specimen.

Scythris cretiflua, n. sp.

♂. 12-14 mm. Head, palpi, thorax, and abdomen ochreous-whitish. Forewings elongate-lanceolate, acute ; ochreous-whitish : cilia yellow-whitish. Hindwings with 4 and 5 separate ; pale greyish ; cilia yellow-whitish.

Barberton, Pretoria (Janse) ; in November and December, four specimens.

Scythris stagnosa, n. sp.

♂. 11 mm. Head and thorax whitish-ochreous. Palpi whitish, anteriorly greyish. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate-lanceolate, acute ; whitish-ochreous, towards costa tinged with greyish-ochreous : cilia whitish-ochreous, towards tornus tinged with grey. Hindwings with 4 and 5 separate ; grey ; cilia grey.

Pretoria (Janse) ; in November, one specimen.

Scythris aquaria, n. sp.

♂. 12 mm. Head grey, somewhat mixed with white. Palpi white, anteriorly mixed with dark fuscous. Thorax grey, more or less streaked suffusedly with white. Abdomen whitish-grey, anal tuft whitish-ochreous. Forewings elongate-lanceolate, acute ; fuscous ; a suffused white streak along costa from $\frac{1}{4}$ to apex, with short suffused lines on veins running into it ; a strong white median streak from base to beyond middle, whence it divides into several branches along veins, and very faintly split along fold ; suffused white subdorsal and dorsal lines from base to tornus : cilia grey, on costa and a subapical patch white. Hindwings with 4 and 5 separate; dark grey, thinly scaled towards base; cilia grey.

Pretoria, Barberton (Janse); in January and March, two specimens.

Scythris latebrosa, n. sp.

♀. 10-11 mm. Head and thorax dark greyish-bronze, back of crown sprinkled with whitish. Palpi white, more or less suffused with dark fuscous anteriorly. Abdomen dark grey, ventral surface ochreous-white. Forewings elongate-lanceolate; dark greyish-bronze; submedian fold irregularly strewn with obscure grey-whitish scales, with indistinct small cloudy dark fuscous spots before middle of wing and midway between this and base: cilia rather dark fuscous. Hindwings with 4 and 5 separate; dark fuscous; cilia dark fuscous.

Barberton, Three Sisters (Janse); in January and March, two specimens.

BLASTOBASIDAE.

Blastobasis byrsodepta, n. sp.

♂ ♀. 13-15 mm. Head whitish-ochreous irrorated with fuscous. Palpi whitish-ochreous irrorated with dark fuscous and blackish, terminal joint in ♂ $\frac{2}{3}$ of second, more thickened and curved than in ♀, acute, in ♀ nearly as long as second. Antennnae in ♂ very shortly ciliated, without notch. Thorax fuscous, suffused with dark fuscous anteriorly. Abdomen grey. Forewings elongate-lanceolate, acute; fuscous, irrorated with pale greyish-ochreous and irregularly sprinkled with dark fuscous; a rather oblique subtriangular patch of dark fuscous suffusion from dorsum before middle of wing, reaching more than half across wing, and a small undefined spot of dark fuscous suffusion on costa before middle; second discal stigma and a dot beneath it above tornus cloudy dark fuscous; an undefined spot of dark fuscous suffusion towards apex: cilia fuscous, torwads base sprinkled with pale greyish-ochreous. Hindwings grey; cilia light fuscous.

Waterval Onder, Barberton (Janse); in November and December, four specimens. Also one in my collection from Pinetown, Natal, in January (Leigh).

Blastobasis industria, n. sp.

♂ ♀. 16-21 mm. Head whitish-ochreous, sometimes sprinkled with light grey. Palpi ochreous-whitish, variably sprinkled or irrorated with dark fuscous, terminal joint about $\frac{2}{3}$ of second, acute. Antennae in ♂ moderately ciliated, with notch above basal joint. Thorax fuscous irrorated with whitish-ochreous, anteriorly suffused with dark fuscous. Abdomen pale grey, base of segments dark red-brown. Forewings elongate-lanceolate, obtuse-pointed; fuscous irrorated with whitish-ochreous and sprinkled with dark fuscous; a spot of dark fuscous suffusion on base of costa; a somewhat curved fascia of dark fuscous suffusion before middle, interrupted in middle, extremity of upper portion formed by dark fuscous first discal stigma; second discal stigma dark fuscous, and a similar dot above tornus beneath it; some undefined dots of dark fuscous suffusion on margins towards apex: cilia pale fuscous, irrorated with whitish-ochreous. Hindwings light fuscous; cilia pale greyish-ochreous.

Barberton (Janse); in December and January, four specimens. Very like *acarta* from the Seychelles, but the hindwings in that species are obviously narrower and more acute, antennae in ♂ with scattered long ciliations towards base.

OECOPHORIDAE.

Promalactis veridica, n. sp.

♂. 10 mm. Head and thorax orange-yellow, forehead broadly shining white, sides and lower part of face grey. Palpi orange-yellow, terminal joint rather shorter than second, its anterior edge dark fuscous. Antennae white spotted with blackish, beneath dark fuscous, ciliations nearly 2. Abdomen pale greyish. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; orange-yellow; markings snow-white edged with black; an almost marginal streak from middle of base to $\frac{1}{4}$ of dorsum; a slightly curved inwardly oblique streak from dorsum before middle, reaching $\frac{2}{3}$ across wing, very finely connected on dorsum with a trapezoidal spot before tornus reaching nearly half across wing and containing two or three grey scales centrally; a transverse spot on costa about $\frac{2}{3}$, reaching half across wing, somewhat beyond dorsal spot; a streak along upper part of termen: cilia orange-yellow. Hindwings lanceolate, 3 absent; grey; cilia pale greyish-ochreous.

Pretoria (Swierstra); in November, one specimen.

Promalactis geometrica, n. sp.

♂. 14 mm. Head and thorax golden-fulvous, forehead white. Palpi fulvous-orange, tip whitish. Antennae white ringed with dark fuscous, ciliations 2. Abdomen dark fuscous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded; golden-fulvous; markings white, irregularly edged with black scales; a short slender streak along basal portion of dorsum; a slender erect streak from $\frac{1}{3}$ of dorsum, its apex bent round in disc towards base but not nearly reaching it; a slender streak running from middle of dorsum to middle of disc and thence angulated back to dorsum before tornus; a triangular spot on costa at $\frac{3}{5}$, rather broadly edged with blackish posteriorly, the blackish margin reaching half across wing: cilia fulvous-orange. Hindwings $\frac{3}{4}$, elongate-ovate, 3 and 4 approximated at base; dark fuscous; cilia rather dark fuscous.

Barberton (Janse); in December, one specimen.

Saropla dryozona, n. sp.

♀. 11 mm. Head and thorax white sprinkled with light fuscous. Palpi white, second joint ochreous-brown except apex, tuft moderate, triangular. Abdomen grey. Forewings elongate, costa moderately arched, apex tolerably pointed, termen rounded, oblique; white, sprinkled with light fuscous; a slightly incurved ochreous-brown fascia from beyond middle of costa to middle of dorsum, anterior margin edged with black and then with pale yellowish; indented in middle, posterior margin suffused with ochreous-yellowish; an ochreous-brown inwardly oblique spot from tornus, edged anteriorly with black and suffused posteriorly with ochreous-yellowish, almost running into middle of fascia ; an acutely angulated row of black dots running near posterior part of costa and termen : cilia ochreous-whitish sprinkled with grey, with a grey median line, and grey bars at apex and tornus. Hindwings pale grey ; cilia whitish-ochreous, tinged with grey.

Three Sisters (Janse) ; in March, one specimen.

Eulechria phaeopsamma, n. sp.

♀. 13-15 mm. Head, palpi, thorax, and abdomen ochreous-yellow, terminal joint of palpi shorter than second. Forewings elongate, costa moderately arched, apex obtuse, termen very obliquely rounded ; yellow-ochreous, sprinkled with fuscous on costal half and posteriorly : cilia yellow-ochreous, sprinkled with fuscous towards base. Hindwings light grey ; cilia whitish-ochreous.

Barberton (Janse) ; in December and January, four specimens.

Eucleodora ingrata, n. sp.

♀. 16-17 mm. Head and thorax light brownish more or less mixed with grey. Palpi light brownish, second joint with three indistinct bands, terminal joint with a median band of blackish irroration. Abdomen pale greyish-ochreous. Forewings elongate, rather narrow, costa moderately arched, apex obtuse-pointed, termen very obliquely rounded ; brown more or less irrorated with dark fuscous ; a black dot beneath costa near base ; a moderately broad oblique blackish-grey streak from $\frac{1}{4}$ of costa to fold, and a triangular patch occupying median third of costa and reaching half across wing ; discal stigmata blackish, first resting on posterior edge of oblique costal streak, sometimes posteriorly white-edged ; posterior area of wing more or less suffused or streaked with dark grey, posterior part of costa and termen suffusedly spotted with blackish-grey : cilia grey. Hindwings and cilia grey.

Barberton, Three Sisters (Janse) ; from December to February, three specimens.

Eutorna diluvialis, n. sp.

♀. 17 mm. Head and thorax whitish-ochreous, face more whitish. Palpi ochreous-whitish, second joint densely scaled, somewhat rough towards apex above, brownish-ochreous except apex, terminal joint $\frac{2}{3}$ of second. Abdomen whitish-ochreous. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen extremely obliquely rounded ; brownish-ochreous, with a few scattered dark fuscous specks, costa and veins very obscurely streaked with whitish-ochreous ; plical and second discal stigmata black ; some small groups of black scales round posterior part of costa and termen : cilia pale brownish-ochreous. Hindwings pale greyish ; cilia whitish-ochreous.

Barberton (Janse) ; in January, one specimen.

Depressaria melanarcha, n. sp.

♂. 18 mm. Head and thorax blackish, head finely sprinkled with grey-whitish. Palpi greyish-ochreous mixed with blackish, terminal joint shorter than second, pale rosy-ochreous with blackish basal and supramedian bands. Antennae and abdomen grey. Forewings elongate, costa moderately arched, apex rounded, termen rounded, somewhat oblique ;

2 and 3 stalked; light greyish-ochreous, with some scattered blackish scales; base narrowly black; two small blackish spots on costa before and beyond $\frac{1}{3}$; an irregular suffused blackish blotch on costa beyond middle, reaching nearly half across wing, terminated beneath by some brown-reddish suffusion, in which is a white dot representing second discal stigma; some blackish strigulae tending to form a subterminal series; a row of black dots round posterior part of costa and termen: cilia pale ochreous, with grey basal shade and postmedian line. Hindwings pale grey; cilia pale greyish-ochreous, with grey subbasal line, and round apex with grey postmedian line.

Barberton (Janse); in December, one specimen. Allied to *trimenella*, but immediately separated by the black base of forewings.

STENOMIDAE.

Stenoma dicentra, n. sp.

♀. 16 mm. Head, palpi, and thorax pale fuscous, palpi moderate, terminal joint as long as second. Abdomen whitish-fuscous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen nearly straight, little oblique; 2 and 3 stalked, 4 and 5 approximated, 7 to apex; pale glossy fuscous; plical and second discal stigmata rather large, blackish: cilia fuscous-whitish. Hindwings and cilia fuscous-whitish.

Barberton (Janse); in December, one specimen.

HYPONOMEUTIDAE.

Epermenia ochrodesma, n. sp.

♂. 10 mm. Head and thorax ochreous-white sprinkled with dark fuscous specks. Palpi whitish sprinkled with blackish. Abdomen light grey, anal tuft ochreous-whitish. Forewings elongate, very narrow, costa slightly arched, apex obtuse-pointed, termen extremely obliquely rounded; ochreous-white; costa throughout, and apical third of wing suffused with pale grey and sprinkled with black; basal area more ochreous-tinged, with a few scattered dark fuscous specks; discal stigmata black, first very small, second larger; an ochreous-brown median transverse fascia between these, furcate on lower half, each branch terminated by a small black dorsal scaletooth, second branch extended on dorsum to tornus; a brownish spot in grey apical area beyond second discal stigma, and a small brown apical spot: cilia pale grey, with two blackish lines, base sprinkled with blackish. Hindwings grey; cilia pale greyish.

Barberton (Janse); in December, one specimen.

Epermenia criticodes, n. sp.

♀. 12 mm. Head white, sprinkled with grey. Palpi whitish-grey irrorated with blackish. Thorax white irrorated with grey and on margins with blackish. Abdomen grey-whitish. Forewings elongate, very narrow, costa slightly arched, apex obtuse-pointed, termen extremely obliquely rounded; pale grey sprinkled with darker; costa strigulated with blackish on anterior half; base, dorsum, posterior half of costa, a broad median fascia, and apical area suffused with dark grey and blackish irroration; a white spot on dorsum towards base, edged with blackish irroration extending $\frac{3}{4}$ across wing; discal stigmata black, at $\frac{1}{3}$ and $\frac{2}{3}$; fold and posterior half of disc obscurely streaked with fuscous; black dorsal scaleteeth at $\frac{1}{3}$, middle, and $\frac{2}{3}$ of wing, dorsum between and beyond these irregularly mixed with white: cilia grey, round apex suffused with white and irrorated with black. Hindwings pale grey; cilia whitish-grey.

Waterval Onder (Janse); in November, one specimen.

Epermenia proserga, n. sp.

♂. 12 mm. Head, palpi, and thorax dark fuscous irrorated with whitish. Abdomen dark grey. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; dark fuscous finely irrorated with white and sprinkled with black; disc irregularly marked with undefined spots of ochreous-brown suffusion; three black dots placed in a straight line in disc from $\frac{1}{3}$ to $\frac{2}{3}$; two small blackish dorsal scaleteeth before and beyond middle of wing: cilia grey, round apex irrorated with blackish and whitish. Hindwings dark grey, lighter in disc and towards base; cilia grey.

Barberton (Janse); in January, one specimen.

Argyresthia pentanoma, n. sp.

♂. 9 mm. Head, palpi, and thorax white, shoulders narrowly fuscous. Antennae ochreous-whitish. Abdomen grey. Forewings lanceolate, 7 and 8 separate; rather dark bronzy-fuscous, marbled with white between veins, dorsal half suffused with shining white from base to tornus; five small irregular blackish spots, viz., one beneath fold before $\frac{1}{3}$, one in disc beyond this, one in disc beyond middle, one on dorsum before this, and one above tornus: cilia ochreous-whitish, round apex fuscous with a blackish basal line, on costa fuscous. Hindwings grey; cilia pale greyish-ochreous.

Three Sisters (Janse); in February, one specimen.

Argyresthia stilpnota, n. sp.

♂ ♀. 9-11 mm. Head, palpi, and thorax white, patagia dark bronzy-fuscous. Antennae white ringed with dark fuscous. Abdomen whitish-fuscous. Forewings lanceolate, 7 and 8 separate; rather dark bronzy-fuscous, sometimes mixed or marbled with white, especially in ♂; an irregular-edged moderately broad shining white dorsal streak from base to tornus, attentuated and sometimes sprinkled with fuscous posteriorly, upper edge indented by a dark fuscous spot at $\frac{1}{3}$ of wing; a dark fuscous oblique transverse bar beyond middle, indenting white dorsal streak but not reaching costa or dorsum; a dark fuscous oblique mark above tornus: cilia ochreous-whitish, round apex fuscous-tinged, with blackish-fuscous basal line and outer half rather dark fuscous. Hindwings grey; cilia ochreous-whitish tinged with grey.

Barberton, Waterval Onder (Janse); from November to January, four specimens.

Abacistis, n. g.

Head loosely rough-scaled, face smooth centrally; ocelli present; tongue very short. Antennae $\frac{3}{4}$, in ♂ moderately ciliated, basal joint rather short, stout, with dense projecting flap of scales. Labial palpi rather short, slightly curved, porrected, thickened with loose scales, terminal joint nearly as long as second, tolerably pointed. Maxillary palpi short, loosely scaled, appressed to tongue. (Posterior tibiae broken.) Forewings with 2 from towards angle, 3–5 approximated at base, 7 to costa, 9 and 10 stalked, 11 from $\frac{2}{3}$ of cell. Hindwings 1, elongate-ovate, cilia $\frac{2}{3}$; 3 and 4 connate, 5–7 parallel, transverse vein oblique.

Abacistis hexanoma, n. sp.

♂. 16 mm. Head, palpi, and thorax silvery-white. Abdomen ochreous-whitish. Forewings elongate, costa moderately arched, apex rounded-obtuse, termen obliquely rounded; silvery-white; six blackish dots, viz., one beneath costa near base, one beneath costa at $\frac{1}{5}$, one on fold at $\frac{1}{4}$, one towards costa at $\frac{1}{3}$, one towards dorsum beyond middle, and one above middle at $\frac{2}{3}$; cilia white. Hindwings ochreous-white; cilia white.

Barberton (Janse); in December, one specimen.

Lytrophila, n. g.

Head with appressed scales; ocelli present; tongue absent. Antennae $\frac{1}{2}$, in ♂ shortly ciliated, basal joint moderate, with pecten. Labial palpi very short, drooping, loosely scaled, tolerably pointed. Maxillary palpi obsolete. Posterior tibiae with appressed scales. Forewings with 2 from angle, 7 to termen, seldom stalked with 8, 9 absent, 11 from middle; Hindwings 1, elongate-ovate, cilia $\frac{1}{2}$; 4 absent, 6 and 7 approximated at base or short-stalked.

Type *L. panarga*. Allied to *Gymnogramma*.

Lytrophila panarga, n. sp.

♂. 17 mm. Head, palpi, thorax, and abdomen white. Forewings elongate, costa gently arched, apex obtuse, termen obliquely rounded; silvery-white; costal edge dark grey towards base: cilia white. Hindwings grey-whitish; cilia white; 6 and 7 short-stalked.

Balmoral (Janse); in October, one specimen.

Lytrophila humida, n. sp.

♀. 14-16 mm. Head ochreous-whitish. Palpi light greyish-ochreous. Thorax light greyish-ochreous, posteriorly whitish. Abdomen pale whitish-ochreous. Forewings elongate, costa gently arched, apex obtuse, termen obliquely rounded; pale glossy greyish-ochreous, somewhat sprinkled with whitish: cilia whitish-ochreous. Hindwings with 6 and 7 approximated towards base; whitish-ochreous-grey; cilia concolorous.

Three Sisters (Janse); in March, two specimens.

Parazelota, n. g.

Head with loosely appressed scales; ocelli present; tongue very short. Antennae $\frac{3}{5}$, basal joint moderate, without pecten. Labial palpi long, almost straight, obliquely ascending, second joint densely scaled, somewhat rough beneath, terminal joint very short, about $\frac{1}{4}$ of second, loosely scaled, obtuse pointed. Maxillary palpi obsolete. Thorax with posterior crest. Posterior tibiae with appressed scales, slightly roughened above on basal half. Forewings with vein 1*b* furcate towards base, 2 from angle, 3 somewhat approximated, 4 parallel, 5 from above lower parting-vein, 6 parallel, 7 to apex, 11 from beyond middle, secondary cell well-defined, unusually long, more than half cell. Hindwings 1, ovate, cilia $\frac{1}{6}$, lower margin of cell with pecten of long hair scales towards base, frenulum in ♀ of about

10 bristles ; 3 and 4 remote but slightly approximated at origin, 5–7 parallel, transverse vein between 3 and 4 outwardly oblique, between 4 and 5 strongly oblique inwards, between 5 and 6 absent but cell-wall formed by acute fork of median parting-vein, between 6 and 7 normal, slightly oblique inwards.

A singular form allied to *Exaulistis*.

Parazelota dryotoma, n. sp.

♀. 40 mm. Head and palpi pale brownish, somewhat sprinkled with dark fuscous. Thorax pale ochreous, shoulders brownish, crest mixed with blackish (damaged). Abdomen pale yellow-ochreous, somewhat sprinkled with brownish. Forewings elongate, moderately broad, costa strongly arched, apex obtuse, termen rounded, oblique ; light brown, sprinkled with dark fuscous ; basal area more mixed with dark fuscous ; an oblique streak of dark fuscous suffusion from costa beyond $\frac{1}{4}$, reaching about half across wing ; an undefined triangular patch of dark fuscous suffusion on middle of costa ; extremities of veins streaked with dark fuscous : cilia pale ochreous, basal half obscurely barred with fuscous, with a darker fuscous cloudy median line. Hindwings pale fuscous, basal pectinations pale greyish-ochreous ; cilia whitish-ochreous, with two faint fuscous shades.

Three Sisters (Janse) ; in March, one specimen.

Exanthica, n. g.

Head with dense tolerably appressed scales, side tufts rather rough, face with conical projection of scales ; ocelli small ; tongue absent. Antennae $\frac{4}{5}$, in ♂ serrate, shortly ciliated, basal joint very short. Labial palpi long, subascending, second joint long, thickened with dense rough projecting scales above and beneath, terminal joint short, stout, obtuse. Maxillary palpi rudimentary. Thorax with posterior oblique crest. Posterior tibiae long, roughly haired above, more strongly on basal half. Forewings with 2 from angle, 3–5 approximated at base, 8 to termen, 11 from $\frac{2}{3}$ of cell. Hindwings 1, ovate, cilia $\frac{1}{2}$; 3 and 4 approximated at base, 5–7 nearly parallel, 5 and 6 slightly approximated basally.

Type *E. trigonella* Feld. A remarkable form which, however, cannot be assigned to any other existing family than this.

Exanthica trigonella Feld., Reis, Novar. pl. CXXXIX, 39.

♂. 18-20 mm. Forewings elongate-triangular, fuscous, posterior half irrorated with white, less so on a triangular dorsal patch before tornus ; basal half darker, limited by a white median streak parallel to termen, edged anteriorly with blackish-fuscous, not reaching costa ; a sharply defined triangular blackish-fuscous spot occupying upper half of termen, edged with white. Hindwings light fuscous.

Woodbush Village, Barberton (Swierstra, Janse) ; in December and January.

Epiphractis rubricata, n. sp.

♂ ♀. 13-19 mm. Head and thorax dark purplish-fuscous closely irrorated with white, thorax sometimes tinged with yellowish. Palpi white irrorated with dark fuscous. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, costa gently arched, apex obtuse-pointed, termen straight, oblique ; light reddish-ochreous-brown, brown, brown-reddish, or dark fuscous, variably irrorated with whitish, costal edge more or less whitish ; two bright deep yellow dorsal patches, first elongate, reaching from base to or near middle, confluent on dorsum with second or in darker specimens separated from it by a patch of crimson-purple suffusion, its dorsal edge usually brown-reddish or purple towards base, second smaller, rounded, sometimes followed by crimson-purple suffusion, in lighter specimens the second blotch is surrounded by dark fuscous suffusion ; terminal area sometimes suffused with purple : cilia brownish or violet-grey, irrorated with dark fuscous. Hindwings in ♂ without hair pencil, grey or rather dark grey ; cilia grey.

Pretoria, Barberton, Waterval Onder (Miss S. Viljoen, Janse) ; Pinetown, Natal (Leigh) ; from November to February, five specimens.

Epiphractis crocoplecta, n. sp.

♂. 15 mm. Head pale yellowish suffused with brown-reddish on sides, scales forming a raised tuft between antennae. Palpi pale yellowish closely irrorated with dull crimson, second joint towards apex above with rough projecting scales, terminal joint $\frac{3}{5}$ of second, loosely scaled posteriorly. Thorax rosy-ochreous, patagia purplish-brown. Abdomen grey, anal tuft grey-whitish. Forewings elongate, costa moderately arched, apex pointed, termen faintly sinuate, oblique ; dull crimson-purplish, costal edge grey ; a patch of ochreous suffusion along basal $\frac{2}{5}$ of dorsum ; an inwardly oblique yellow streak from dorsum beyond middle, reaching more than half across wing, edged anteriorly with deep ferruginous ; a short inwardly oblique slender yellow streak from tornus ; a ferruginous-brown transverse dot above apex of this, representing second discal stigma : cilia pale ochreous irrorated with crimson-purplish. Hindwings grey, paler towards base ; cilia ochreous-grey-whitish.

Three Sisters (Janse) ; in February, one specimen.

Trochastica, n. g.

Head with appressed scales ; ocelli present ; tongue short, slight. Antennae $\frac{3}{4}$, basal joint moderate, with dense pecten of scales. Labial palpi rather short, curved, ascending, second joint loosely rough-scaled beneath, terminal joint shorter than second, acute. Maxillary palpi rudimentary. Posterior tibiae clothed with very long rough hairs. Forewings with 2 and 3 stalked, 7 and 8 stalked, 7 to apex, 11 from middle. Hindwings 1, elongate-ovate, cilia $\frac{3}{4}$; 3 and 4 connate, 5 somewhat diverging from 4 towards base, 6 absent, transverse vein oblique.

The affinity of this genus is dubious, depending primarily on the identity of the absent vein in hindwings ; if this were 5 (as is possible), the genus could be attributed to the *Oecophoridae*, and the long hairs of posterior tibiae favour this ; for the present I prefer to place it here.

Trochastica albifrenis, n. sp.

♀. 15-17 mm. Head whitish more or less sprinkled with fuscous. Palpi fuscous sprinkled with dark fuscous, base and apex of terminal joint obscurely whitish. Thorax whitish suffusedly irrorated with dark grey. Abdomen grey. Forewings elongate, costa moderately arched, apex obtuse, termen very obliquely rounded ; grey irrorated with dark fuscous ;

a curved white transverse streak very near base; two curved white transverse streaks about $\frac{1}{3}$, more or less confluent into a fascia; second discal stigma obscure, dark fuscous, partially edged with whitish; a cloudy white streak running from $\frac{3}{4}$ of costa to tornus, angulated inwards beneath costa and outwards in disc: cilia whitish irrorated with grey. Hindwings grey; cilia light grey.

Barberton (Janse); in December and January, two specimens.

ELACHISTIDAE.

Myrrhinitis, n. g.

Head with appressed scales; ocelli present; tongue absent. Antennae $\frac{3}{4}$, basal joint moderate, with pecten. Labial palpi moderate, rather curved, subascending, second joint somewhat loosely scaled beneath towards apex, terminal joint half second, hardly pointed. Maxillary palpi obsolete. Posterior tibiae clothed with hairs above. Forewings with 2 from angle, 8 and 9 out of 7, 7 to termen, 11 from beyond middle. Hindwings $\frac{1}{2}$, narrow-lanceolate, cilia 5; 4 absent, 6 and 7 approximated towards base.

Myrrhinitis sporeuta, n. sp.

♀. 9 mm. Head, palpi, and thorax white sprinkled with dark fuscous. Abdomen pale grey. Forewings elongate-lanceolate; white, irrorated with grey and dark fuscous points; stigmata very obscurely indicated by confluence of these, plical very obliquely before first discal; apex of wing sometimes suffused with grey: cilia whitish sprinkled with dark fuscous points, round apex with a dark fuscous apical line. Hindwings pale grey; cilia ochreous-whitish.

Barberton (Janse); in December, two specimens.

Elachista chelonitis Meyr.

The second joint of palpi a short rough apical tuft of projecting scales beneath, not observed in original specimen, in which it must have been rubbed; in all other respects the species is a true *Elachista*, and need not be generically separated. The stigmata form slightly raised tufts.

Elachista nimbifera, n. sp.

♂ ♀. 9 mm. Head and palpi white. Thorax white sprinkled with fuscous. Abdomen ochreous-whitish. Forewings lanceolate; 4 and 8 present, 6 separate; white or ochreous-white, more or less closely sprinkled with grey or fuscous; plical and second discal stigmata cloudy, dark fuscous, in one specimen forming rather large very cloudy fuscous spots: cilia whitish, more or less sprinkled with dark fuscous. Hindwings with 4 present, transverse vein distinct; grey; cilia grey-whitish.

Barberton, Waterval Onder (Janse); from November to January, seven specimens. Peculiar in having 6 of forewings separate, but not otherwise differing from *Elachista*, of which it must be regarded as a primitive species.

Mendesia inscia, n. sp.

♂. 7-9 mm. Head, palpi, and thorax white. Antennae grey. Abdomen whitish. Forewings lanceolate; 5 absent, 6 separate; ochreous-white; costal edge dark fuscous towards base: cilia ochreous-white.

Hindwings with 5 approximated to stalk of 6 and 7 towards base; grey; cilia grey-whitish.

Barberton (Janse); in December and January, four specimens.

COLEOPHORIDAE.

Batrachedra heliota, n. sp.

♂ ♀. 12–15 mm. Head, palpi, and thorax bronzy-ochreous. Abdomen pale ochreous. Forewings linear-lanceolate, long-pointed, very acute; bronzy-ochreous or yellow-ochreous; costa slenderly suffused with dark fuscous from base to beyond middle: cilia pale yellow-ochreous. Hindwings pale greyish; cilia whitish-ochreous-grey.

Waterval Onder (Janse); in November, seven specimens.

Coleophora aphanombra, n. sp.

♂ ♀. 12-13 mm. Head, thorax, and abdomen white. Palpi white, with a grey lateral streak. Antennae white ringed with fuscous. Forewings elongate-lanceolate, acute; white, with some irregularly scattered grey scales, especially towards apex; very faint pale ochreous median streak from base to apex, and subdorsal from base to tornus: cilia ochreous-white. Hindwings pale greyish; cilia ochreous-whitish, slightly greyish-tinged towards base.

Pretoria, Three Sisters (Janse); in November and March, two specimens.

Coleophora intensa, n. sp.

♀. 12-13 mm. Head, antennae, and thorax whitish-ochreous. Palpi long, pale ochreous, scales of second joint angularly projecting at apex beneath, terminal joint as long as second, erect. Abdomen pale whitish-ochreous. Forewings elongate-lanceolate, apex very acute; glossy dark slaty-fuscous; a slender whitish-ochreous streak along costa throughout, becoming fulvous posteriorly; a whitish-ochreous dorsal band, at first occupying half of wing, posteriorly narrowed and suffused with fulvous, reaching apex, indistinctly streaked with ground colour towards middle: cilia whitish-ochreous, suffused with fulvous towards base, and wholly round apex. Hindwings grey; cilia whitish-ochreous, suffused with grey towards base.

Barberton, Three Sisters (Janse); in January and March, two specimens.

Coleophora diffusa, n. sp.

♂. 11 mm. Head white, tinged with pale ochreous on crown. Palpi and antennae white. Thorax white, with a faint pale ochreous dorsal streak. Abdomen grey-whitish. Forewings elongate-lanceolate, apex produced, acute; pale yellow-ochreous; a moderately broad white streak along costa from base to beyond middle, thence slender and suffused to apex; a thick white streak along fold throughout, and a similar streak from above this at $\frac{1}{3}$ to middle of termen; suffused white streaks on veins posteriorly, not quite reaching median streak or margin; a suffused white streak along dorsum from base to tornus: cilia pale ochreous. Hindwings light grey; cilia pale greyish-ochreous.

Three Sisters (Janse); in March, one specimen.

Coleophora illustrata, n. sp.

♀. 13-14 mm. Head white, crown ochreous-tinged. Palpi white, second joint with a brownish streak. Antennae white ringed with fuscous. Thorax white, with ochreous dorsal streak. Abdomen whitish. Forewings elongate-lanceolate, apex somewhat produced, acute; pale yellow-ochreous; costa and dorsum from base to beyond middle of wing, and all veins marked with shining white streaks: cilia ochreous-grey-whitish, round apex and costa suffused with white. Hindwings light grey; cilia grey-whitish.

Pretoria (Janse); in February, three specimens.

Coleophora ordinaria, n. sp.

♂. 15 mm. Head pale greyish-ochreous, sides of head, and patagia except shoulders suffused with white. Palpi fuscous, white above. Antennae white, ochreous-tinged towards base. Abdomen grey. Forewings lanceolate, apex acutely produced; greyish-ochreous; a white streak along costa from base to beyond middle; a streak of whitish suffusion along dorsum from base to beyond middle; all veins marked with rather suffused white streaks: cilia light ochreous-grey, on costa wholly white anteriorly and towards tips posteriorly. Hindwings and cilia grey.

Pretoria (Swierstra); in November, one specimen.

Coleophora oxyphaea, n. sp.

♀. 11 mm. Head and thorax whitish-grey. Palpi white. Antennae grey ringed with white. Abdomen grey. Forewings very narrow, elongate-lanceolate, long-pointed, very acute; pale ochreous-grey, with some scattered blackish-grey scales between veins; veins very indistinctly suffused with whitish; a small irregular blackish dot in disc at $\frac{2}{3}$: cilia pale greyish-ochreous. Hindwings grey; cilia pale greyish-ochreous, greyer towards base.

Barberton (Janse); in December, three specimens.

Porotica, n. g.

Head with appressed hairs, side tufts loose; ocelli absent; tongue developed. Antennae 1, basal joint elongate, with pecten. Labial palpi moderately long, slightly curved, porrected, second joint with rough spreading tuft of long scales beneath, terminal joint somewhat shorter than second, smooth-scaled, acute. Maxillary palpi obsolete. Posterior tibiae clothed with long fine hairs above. Forewings with 2–5 approximated at base, 2 very short, 6 absent, 7 and 8 stalked, 7 to costa, 11 from middle. Hindwings $\frac{3}{5}$, narrow-lanceolate, cilia 3; 4 absent, transverse vein absent between 3 and 5, 5 and 6 stalked.

Apparently allied to *Iriothyrsa*.

Porotica astragalis, n. sp.

♀. 18 mm. Head yellow-whitish. Palpi light ochreous-yellowish, towards base suffused with dark fuscous, terminal joint white. Antennae grey. Thorax ochreous-whitish, anteriorly mixed with ochreous-yellowish. Abdomen whitish-ochreous, two basal segments grey dorsally. Forewings elongate-lanceolate, long-pointed, acute; whitish-ochreous, suffusedly streaked longitudinally with light ochreous-yellowish, with a few minute scattered black specks; a small black scale tuft near base in middle, and a black dot above it; two irregular grey blotches suffusedly irrorated with black, first in disc before middle, nearly reaching both margins, with three projections posteriorly, and two anteriorly, of which the lower is hooked downwards, second on tornus, somewhat pentagonal, reaching half across wing: cilia light ochreous-yellowish, towards base with some blackish points. Hindwings light grey; cilia pale ochreous-yellowish.

Barberton (Janse); in December, one specimen.

Glyphipterygidae.

Glyphipteryx medica Meyr.

One ♀, in good condition; apex of first dorsal streak acutely produced posteriorly, metallic postmedian stria interrupted in middle, but these differences from the type do not indicate a distinct species.

Pretoria, in December (Swierstra). Described from the Seychelles.

Plutellidae.

Lepocnemis, n. g.

Head with rough hairs, rather tufted between antennae; ocelli absent; tongue developed. Antennae 1, basal joint moderate, with pecten. Labial palpi rather long, slightly curved, porrected, with appressed scales, slightly rough beneath, terminal joint shorter than second, pointed. Maxillary palpi rather short, filiform, porrected. Anterior and middle tibiae rather thickened with scales, posterior tibiae smooth. Forewings with 2 from towards angle, 3–5 approximated, 7 to termen, 8 and 9 approximated, 10 absent, 11 from beyond middle. Hindwings somewhat under 1, elongate-ovate, cilia $1\frac{1}{4}$; 2 widely remote, 3 and 4 short-stalked, 5 from middle of transverse vein, 6 and 7 approximated towards base.

An interesting form, allied to *Tonza*.

Lepocnemis bascanopa, n. sp.

♀. 15-16 mm. Head white, on forehead mixed with fuscous. Palpi whitish, more or less sprinkled with dark fuscous, especially on second joint. Thorax white, sometimes with two or three fuscous scales on dorsum. Abdomen whitish. Forewings elongate, narrow, costa gently arched, apex round-pointed, termen sinuate, rather strongly oblique; light fuscous, with dark fuscous scales tending to form strigulae, and strewn with numerous suffused white dots and spots; a rather broad suffused silvery-white streak along dorsum from base to $\frac{3}{4}$, irregularly indented by ground colour at $\frac{1}{4}$, cut beyond middle by an irregular dark fuscous streak running to near costa at $\frac{2}{3}$ and thence angulated to tornus; a small dark fuscous spot on costa in middle, and three towards apex, sometimes tending to be connected with angulated streak; a black apical dot, and some black scales on termen beneath apex: cilia fuscous mixed with whitish, with two indistinct dark fuscous lines, round apex tinged with ochreous-yellowish, towards tornus suffused with whitish. Hindwings whitish-grey, greyer posteriorly; cilia whitish-grey.

Barberton, Waterval Onder (Janse); from November to January, three specimens.

Acrolepia canachopis, n. sp.

♀. 9 mm. Head, thorax, and abdomen fuscous. Palpi whitish irrorated with fuscous, with indistinct bands of dark fuscous irroration.

Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen sinuate, oblique; fuscous sprinkled with dark fuscous; costa irregularly marked with small whitish spots, three before middle subconfluent into a blotch; a whitish stria from dorsum at $\frac{1}{4}$, reaching half across wing, an irregular spot on middle of dorsum, a dot before tornus, a striga from tornus reaching $\frac{2}{3}$ across wing, and several dots on termen: cilia fuscous, with dark fuscous subbasal line. Hindwings and cilia grey.

Barberton (Janse); in January, one specimen.

Epistomotis amphicentra, n. sp.

♂. 15 mm. Head white, face mixed with fuscous. Palpi white, second joint dark fuscous except anterior edge, tuft very long, terminal joint as long as second. Antennal ciliations $\frac{2}{3}$. Thorax fuscous mixed with white. Abdomen whitish. Hairs of posterior tibiae very long. Forewings elongate, narrow, costa gently arched, apex obtuse, termen extremely obliquely rounded; fuscous mixed with white, with some scattered black scales, all veins suffusedly streaked with white; a round dot of black irroration in disc at $\frac{1}{3}$, and two transversely placed at $\frac{2}{3}$; some black irroration along termen: cilia whitish, basal half irrorated with fuscous. Hindwings fuscous, veins darker; cilia whitish, basal half fuscous-tinged.

Pretoria (Swierstra); in November, one specimen.

NEPTICULIDAE.

Nepticula nigrata, n. sp.

♂. 5 mm. Head ochreous-whitish. Antennae light grey, eyecaps white. Thorax dark grey. Abdomen blackish-grey. Forewings elongate-lanceolate, acute; dark grey, with faint purplish tinge: cilia grey. Hindwings coarsely scaled, blackish; cilia grey.

Waterval Onder (Janse); in November, one specimen.

Nepticula urbica, n. sp.

♂. 5 mm. Head fulvous-ochreous. (Antennae broken.) Thorax dark purplish-grey. Abdomen grey. Forewings lanceolate; glossy dark purplish-grey: cilia grey. Hindwings and cilia grey.

Barberton (Janse); in January, one specimen.

Nepticula stimulata, n. sp.

♂. 4–5 mm. Head and thorax ochreous-whitish. Antennae pale grey, eyecaps ochreous-whitish. Abdomen pale grey. Forewings lanceolate; whitish-ochreous, sprinkled with black; an undefined apical group of black scales: cilia ochreous-whitish, with a few black points. Hindwings light grey; cilia whitish-grey.

Barberton (Janse); in December, three specimens.

Nepticula primaria, n. sp.

♂ ♀. 5–6 mm. Head fulvous-ochreous. Antennae pale grey, eyecaps ochreous-white. Thorax whitish-ochreous. Abdomen pale greyish. Forewings lanceolate; whitish-ochreous, sprinkled with dark fuscous or blackish on posterior half, and more or less towards costa anteriorly: cilia ochreous-whitish, round apex with a few dark fuscous or blackish points. Hindwings light grey; cilia ochreous-whitish tinged with grey.

Barberton, Three Sisters, Pretoria (Janse); in November, December, and March, six specimens.

Nepticula ingens, n. sp.

♂ ♀. 9–10 mm. Head fulvous, sides sometimes suffused with ochreous-whitish. Antennae grey-whitish, eyecaps ochreous-whitish. Thorax and abdomen whitish-ochreous. Forewings lanceolate; whitish-ochreous: cilia concolorous. Hindwings and cilia ochreous-whitish.

Donkerhoek (Janse); in October, three specimens. This species is of abnormal size for the genus, and very interesting. I have carefully examined the neuration, which is entirely typical.

ERECHTHIADAE.

Opostega granifera, n. sp.

♀. 7 mm. Head and thorax white. Antennae ochreous-whitish, eyecaps white. Abdomen whitish-ochreous. Forewings elongate-lanceolate; silvery-white, with a faint ochreous tinge; a minute black speck at apex: cilia white. Hindwings whitish-grey; cilia white.

Barberton (Janse); in December, one specimen.

Opostega praefusca, n. sp.

♂ ♀. 7–9 mm. Head and thorax white. Antennae in ♂ whitish-ochreous, in ♀ greyish, eyecaps white. Abdomen grey. Forewings lanceolate, apex acute; shining white; apex suffused with fuscous or dark fuscous; a minute black apical dot: cilia white, on costa with dark fuscous basal and antemedian lines. Hindwings and cilia grey.

Barberton (Janse); in December and January, two specimens.

Opostega radiosa, n. sp.

♂. 10–11 mm. Head and thorax white. Antennae ochreous-whitish, eyecaps white. Abdomen whitish-ochreous. Forewings elongate-lanceolate, apex produced, acute; shining white; apex suffused with yellow-ochreous, produced along both margins to $\frac{3}{4}$; a round black apical dot: cilia white, towards tornus whitish-yellowish, at $\frac{3}{4}$ of costa with a fuscous basal dash, before apex with two upwards-diverging blackish lines, at apex with two diverging blackish hooks, beneath apex with a blackish antemedian line. Hindwings ochreous-whitish; cilia whitish-ochreous.

Barberton, Three Sisters (Janse); in December and March, two specimens.

Opostega clastozona, n. sp.

♂. 10-11 mm. Head, antennae, and thorax white, shoulders slenderly dark fuscous. Abdomen ochreous-whitish. Forewings short-lanceolate; white; edge of costa dark fuscous at base; a slender somewhat curved bronzy-fuscous or dark fuscous transverse fascia slightly beyond middle, more or less interrupted in disc; apex narrowly suffused with yellowish or brownish: cilia pale whitish-yellowish, above and below apex with subbasal dark fuscous lines forming an obtuse angle, but not quite meeting. Hindwings grey-whitish; cilia whitish-yellowish.

Barberton (Janse); in December and January, four specimens.

Opostega amphimitra, n. sp.

♂. 8-9 mm. Head and thorax white. Antennae pale grey, eyecaps white. Abdomen grey. Forewings lanceolate, acute; white; two rather dark bronzy-fuscous slender transverse fasciae, first at $\frac{1}{4}$, straight, second at $\frac{3}{4}$, rather curved or bent, sometimes becoming faint towards dorsum; a minute black apical dot: cilia ochreous-whitish, round apex with a fuscous subbasal line. Hindwings and cilia light grey.

Barberton (Janse); from December to February, four specimens.

Cycloponympha, n. g.

Head thinly rough-haired; ocelli absent; tongue short. Antennae $\frac{4}{5}$, sometimes compressed, basal joint moderate, somewhat flattened, loosely haired anteriorly. Labial palpi moderate, porrected, loosely scaled, second joint with several long projecting bristles beneath and laterally, terminal joint as long as second, pointed. Maxillary palpi very short, loosely scaled. Posterior tibiae clothed with long fine hairs above. Forewings with subhyaline oval fovea in end of cell, apex upturned; 2 and 4 connate from angle, 3 absent, 5 and 6 out of 7, 7 to costa, 8 out of 7 or absent, 10 and 11 approximated from upper margin of fovea, 11 short. Hindwings $\frac{2}{3}$, lanceolate, cilia 2; 4 absent, transverse vein absent between 3 and 5, 5 and 6 stalked, 6 to costa, 7 approximated.

Type *C. julia.*

Cycloponympha julia, n. sp.

♀. 11 mm. Head, antennae, thorax, and abdomen white. Palpi grey, terminal joint white. Forewings elongate-lanceolate, apex produced, acute; silvery-white; costal edge blackish towards base; a pale yellow-ochreous suffused subcostal streak towards base; a black dot on fold at $\frac{1}{4}$; a short oblique pale ochreous streak from costa beyond middle; a small blackish wedge-shaped mark on dorsum at $\frac{2}{3}$; an irregular pale ochreous streak along costa towards apex; a black apical dot, surrounded with pale ochreous suffusion in cilia and anteriorly: cilia otherwise white, with dark grey median line round apex. Hindwings pale grey; cilia ochreous-whitish.

Barberton (Janse); in December, one specimen.

Cycloponympha perspicua, n. sp.

♂. 13 mm. Head and antennae snow-white. Palpi pale ochreous. Thorax light brownish-ochreous, patagia posteriorly white. Abdomen pale whitish-ochreous. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; light brownish-ochreous, on posterior half of wing mixed with paler and irrorated with dark fuscous; a wedge-shaped white streak running from base of dorsum to above middle of disc, dorsal area beneath this suffused with whitish-ochreous; discal fovea grey-whitish; short oblique opposite whitish streaks from costa and dorsum in middle of wing; a round black apical dot: cilia whitish-ochreous sprinkled with dark fuscous on basal half, outer half brownish-tinged, tips whitish. Hindwings grey; cilia pale whitish-ochreous.

Barberton (Janse); in January, one specimen.

Bucculatrix inchoata, n. sp.

♂ ♀. 6-7 mm. Head, antennae, and thorax white, centre of crown sometimes faintly ochreous-tinged. Abdomen pale greyish, in ♂ dorsally blackish, anal tuft whitish-ochreous. Forewings lanceolate; white, here and there faintly tinged with ochreous: cilia white. Hindwings very pale greyish; cilia ochreous-whitish.

Pretoria (Janse); in November and January, two specimens.

Bucculatrix galeodes, n. sp.

♂. 8-9 mm. Head and thorax white, crown with a central spot of fuscous suffusion. Antennae dark grey. Abdomen grey. Forewings elongate-lanceolate; white; a raised black dot on fold before middle, one in disc at $\frac{3}{4}$, and one at apex: cilia white. Hind wings grey; cilia whitish, towards base yellowish-tinged.

Pretoria (Janse); in January, two specimens.

Bucculatrix anticolona, n. sp.

♂. 7 mm. Head white, with some excessively minute dark fuscous specks. Antennae, thorax, and abdomen white. Forewings elongate-lanceolate, acute; white, with minute scattered dark fuscous specks; markings brownish, coarsely irrorated with black; a small spot on costa before middle; semioval blotches on costa and dorsum beyond middle, costal posterior; a small spot in disc at $\frac{3}{4}$; a faint yellowish spot before apex: cilia white, with a few blackish specks. Hindwings whitish-grey; cilia grey-whitish.

Pretoria (Janse); in May, one specimen.

Bucculatrix quieta, n. sp.

♂ ♀. 7-8 mm. Head and thorax ochreous-whitish, crown centrally suffused with ochreous-fuscous. Antennae and abdomen light grey. Forewings elongate (somewhat broader than in *lenis*); ochreous-whitish, towards apex more ochreous-tinged; a raised black dot on fold before middle; a mark consisting of a few fuscous scales beneath costa beyond middle; a minute dot of two or three black scales on termen above tornus, and two or three black scales at apex: cilia ochreous-whitish, with a faint median line of fuscous specks, at base beneath apex with two or three blackish scales. Hindwings light grey; cilia ochreous-whitish.

Pretoria (Janse); in December, February, and March, four specimens.

Bucculatrix amara, n. sp.

♂ ♀. 6–7 mm. Head and thorax whitish tinged with fuscous and sprinkled with black. Antennae whitish ringed with dark fuscous. Abdomen grey-whitish. Forewings elongate-lanceolate; whitish sprinkled throughout with black points; anterior and posterior thirds of costa and anterior half of dorsum rather broadly suffused with fuscous; a fuscous median streak mixed with black from base to beyond middle, thence running as a fine line into postmedian fascia; a very oblique narrow fuscous patch from costa before middle; a very oblique fuscous fascia mostly suffused with black from costa beyond middle to termen above tornus; a thick longitudinal black mark at apex: cilia fuscous-whitish on basal half sprinkled with black, above apex much mixed with black towards base. Hindwings light grey; cilia whitish-grey.

Barberton (Janse); in December, two specimens.

Bucculatrix lenis, n. sp.

♂ ♀. 6-7 mm. Head and thorax whitish, crown sometimes centrally suffused with brown. Antennae and abdomen light grey. Forewings elongate-lanceolate ; ochreous-white ; a raised black dot on fold before middle of wing ; a triangular spot of grey suffusion with a few black scales on costa beyond middle, more or less extended as a slender streak along costa towards base, sometimes reaching it ; an indistinct spot of grey suffusion with a few black scales on termen above tornus, sometimes nearly obsolete : cilia ochreous-whitish, on termen irrorated with black towards base. Hindwings and cilia grey.

Barberton, Three Sisters, Waterval Onder (Janse) ; from November to March, seven specimens.

Bucculatrix dulcis, n. sp.

♂ ♀. 6–7 mm. Head whitish variably tinged with ochreous and sometimes sprinkled with dark fuscous. Antennae ochreous-whitish ringed with dark fuscous. Thorax whitish mixed with yellow-ochreous and sprinkled with dark fuscous specks. Abdomen pale grey. Forewings elongate-lanceolate ; whitish, sprinkled throughout with fine dark fuscous specks ; four oblique ochreous patches from costa, third irrorated with black towards costa and extended as an oblique ochreous fascia to tornus ; some undefined ochreous suffusion along fold and dorsum ; a raised black dot on fold before middle of wing, followed by an ochreous spot ; an undefined black dot or group of scales above tornus : cilia ochreous-whitish, on basal half more ochreous-tinged and sprinkled with black specks, round apex with a fine black median line. Hindwings and cilia grey.

Barberton, Three Sisters (Janse) ; from December to March, eleven specimens.

Opogona trophis, n. sp.

♂ ♀. 14-18 mm. Head, palpi, antennae, and thorax whitish-ochreous, palpi partially suffused with dark fuscous above, shoulders narrowly dark purple-fuscous. Abdomen whitish-ochreous. Forewings elongate-lanceolate, apex somewhat produced, very acute ; whitish-ochreous ; an ill-defined dark purple-fuscous patch extending along costa from base to $\frac{2}{3}$, reaching about half across wing, narrowed towards base ; sometimes a suffused dark fuscous mark along dorsum towards base ; an irregular ill-defined dark purplish-fuscous streak from before tornus along termen more or less nearly to apex : cilia whitish-ochreous, more or less sprinkled with grey towards base, at apex with a greyish bar. Hindwings pale grey ; cilia whitish-ochreous.

Barberton (Janse) ; in December and January, four specimens.

Hieroxestis pileigera, n. sp.

♀. 12-13 mm. Head whitish-ochreous, crown dark fuscous. Palpi rather dark fuscous. Antennae whitish-ochreous. Thorax pale greyish-ochreous, becoming fuscous anteriorly. Abdomen whitish-ochreous. Forewings lanceolate ; pale ochreous, with prismatic reflections, slightly sprinkled with fuscous, especially towards apex : cilia whitish-ochreous. Hindwings brassy-grey ; cilia pale greyish.

Barberton (Janse) ; in January, two specimens.

TINEIDAE.

Pilotocoma, n. g.

Head with appressed hairs; ocelli absent; tongue absent. Antennae $\frac{5}{6}$, in ♂ simple, basal joint moderate, with dense anterior pecten of scales. Labial palpi short, filiform, porrected, terminal joint longer than second, pointed. Maxillary palpi obsolete. Posterior tibiae clothed with long hairs above. Forewings with 1*b* simple, 2 from angle, 3–5 absent, 6 and 7 stalked, 8 absent, 9 approximated to 7, 11 from middle (quite as in *Bedellia*). Hindwings $\frac{1}{2}$, narrow-lanceolate, cilia 4; transverse vein absent between 2 and 5, 3 absent, 4 absent.

Allied to *Bedellia*.

Pilotocoma tephroleuca, n. sp.

♂ ♀. 10–13 mm. Head and palpi whitish-grey, collar white. Antennae light grey. Thorax white, anteriorly tinged with grey. Abdomen grey-whitish. Forewings elongate-lanceolate, apex long-pointed, acute; ochreous-white: cilia ochreous-white. Hindwings pale grey; cilia ochreous-whitish.

Barberton, Waterval Onder, Donkerhoek (Janse); from October to December, eleven specimens.

Demobrotis tricarpa, n. sp.

♂. 7–8 mm. Head ochreous-whitish. Palpi dark fuscous. Thorax ochreous-whitish, patagia blackish. Abdomen pale grey. Forewings elongate-lanceolate; 2 from angle, 3 parallel, 4 absent, 5 and 6 out of 7, 7 to costa, 8–10 separate, parallel, 11 from before middle; light grey or whitish-grey, irrorated with blackish in disc, costa and dorsum suffused with ochreous-whitish; three narrow oblique black marks from costa on anterior half; a short black subdorsal streak from base, and a suffused black streak along fold from base to $\frac{2}{5}$ of wing; a suffused black elongate mark in disc before middle; a round ochreous-yellow subdorsal spot beneath middle of wing, edged beneath with black, forming a small black scale-projection on margin; a black spot on costa beyond middle, whence an oblique fascia of blackish irroration runs to tornus, including below middle a black longitudinal mark and ochreous-yellow spots above and below this; three small black spots on costa posteriorly: cilia grey-whitish, with two blackish lines. Hindwings with 4 absent, 5 and 6 stalked from point with 7; light grey; cilia ochreous-whitish.

Barberton (Janse); from December to February, four specimens.

Dicanica, n. g.

Head rough-haired; ocelli present; tongue absent. Antennae $\frac{3}{4}$, basal joint moderate, with pecten. Labial palpi moderately long, porrected, slender, with appressed scales, second joint with several projecting lateral bristles, terminal joint as long as second, hardly pointed. Maxillary palpi several-jointed, folded, filiform. Posterior tibiae clothed with long hairs above. Forewings with 2 from angle, 4 absent, 7 to costa, 11 from before middle. Hindwings $\frac{2}{3}$, lanceolate, cilia 2; 2–4 remote, 5 and 6 stalked, 7 parallel.

Allied to *Tinea*.

Dicanica acrocentra, n. sp.

♀. 12 mm. Head white, face and palpi fuscous. Thorax fuscous, posteriorly suffused with whitish. Abdomen pale grey. Forewings elongate, rather narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; light glossy brownish, with a violet tinge, irrorated with dark fuscous except towards dorsum anteriorly, dorsal area beneath fold whitish-tinged; a black apical dot: cilia whitish-ochreous, towards base sprinkled with dark fuscous, with two dark fuscous posterior shades. Hindwings light grey; cilia ochreous-whitish tinged with grey.

Barberton (Janse); in December, one specimen.

Tineola oratrix, n. sp.

♀. 18 mm. Head ochreous-orange. Palpi, antennae, and thorax ochreous-white. Abdomen pale yellow-ochreous. Forewings elongate, costa moderately arched, apex obtuse, termen very obliquely rounded; ochreous-whitish: cilia concolorous. Hindwings whitish-grey; cilia ochreous-whitish.

Waterval Onder (Janse); in November, one specimen.

Tinea hyalodes, n. sp.

♂. 13-15 mm. Head bright clear yellow. Palpi dark fuscous. Antennae ochreous-whitish. Thorax dark purple-fuscous. Abdomen light greyish-ochreous. Forewings elongate, rather narrow, costa gently arched, apex obtuse-pointed, termen very obliquely rounded; light ochreous, with strong purple reflections, towards costa and on posterior half of wing more or less irrorated with dark purplish-fuscous, especially on margins, base narrowly suffused with dark purplish-fuscous; a more or less developed transverse cloudy dark purplish-fuscous spot on end of cell; cilia purple-greyish-ochreous, suffusedly irrorated with dark purple-fuscous points arranged in rows. Hindwings bronzy-grey; cilia light grey, towards base brassy-tinged.

Barberton (Janse); in January, three specimens.

Tinea megaspila, n. sp.

♂ ♀. 9-10 mm. Head pale ochreous. Palpi dark fuscous, apex whitish. Antennae grey. Thorax pale greyish-ochreous, patagia suffused with blackish. Abdomen grey-whitish. Forewings elongate, rather narrow, costa gently arched, apex obtuse-pointed, termen extremely obliquely rounded; pale glossy yellow-ochreous sprinkled with dark fuscous; costa towards base rather broadly suffused with blackish; a blackish spot above dorsum near base; stigmata represented by rather large blackish spots, plical obliquely before first discal; an undefined blackish spot on dorsum before plical stigma, and a line of blackish scales thence along dorsum and termen to apex; some small suffused dark fuscous spots on costa towards apex: cilia whitish-ochreous, with a grey antemedian shade. Hindwings with 5 and 6 stalked; light grey; cilia grey-whitish.

Barberton (Janse); in December and January, two specimens.

Picrospora purgata, n. sp.

♂. 12-13 mm. Head whitish. Palpi dark fuscous, terminal joint and apex of second white. Thorax pale whitish-ochreous. Abdomen light grey, anal tuft ochreous-whitish. Forewings elongate, costa gently arched, apex obtuse, termen slightly rounded, oblique; whitish-ochreous;

costal edge dark fuscous at base: cilia whitish-ochreous. Hindwings light grey; cilia ochreous-whitish.

Three Sisters (Janse); in February and March, three specimens.

Pseudurgis polychorda, n. sp.

♂. 19 mm. Head, palpi, and thorax fuscous mixed with whitish and dark fuscous. Antennal pectinations 5. Abdomen dark grey. Forewings elongate, moderate, costa gently arched, apex rounded, termen obliquely rounded; grey mixed with whitish; eight straight slightly irregular black transverse striae with some raised scales, edged with light brownish suffusion, first basal, eighth apical; thirteen blackish-grey transverse striae as follows, viz., one in each of first two and last two interspaces, and three in each of the three intermediate interspaces; cilia grey mixed with white, on lower half of termen barred with brownish. Hindwings dark grey, with obscure darker strigulations; cilia whitish-grey, with grey subbasal shade.

Pretoria (Janse); in November, one specimen.

Pseudurgis nephelicta, n. sp.

♂. 18-19 mm. Head, palpi, and thorax whitish, mixed with dark grey and blackish, thoracic crests sometimes tipped with ochreous; terminal joint of palpi moderate, loosely scaled. Antennal pectinations 6. Abdomen whitish mixed with grey. Forewings elongate, posteriorly slightly dilated, costa gently arched, faintly sinuate in middle, apex rounded-obtuse, termen rounded, oblique; grey whitish, becoming whiter in disc beyond middle; costa towards base with three dark grey suffused spots separated with whitish, rest of costal area suffused and strigulated with grey; some strigulae of grey suffusion towards dorsum on anterior half; a patch of grey suffusion extending along posterior half of dorsum and termen to apex, towards its anterior extremity irrorated with black, in middle of upper half of terminal portion with a transverse series of three or four small black spots: cilia whitish mixed with grey, in middle of termen with a whitish bar. Hindwings grey or dark grey; cilia whitish with two grey or dark grey shades.

Barberton (Janse); in December, two specimens.

Struthisca agitata, n. sp.

♂. 13-14 mm. Head whitish, face dark fuscous. Palpi short, slender, dark fuscous. Antennal pectinations 2. Thorax grey, anterior margin darker-suffused. Abdomen pale greyish-ochreous. Forewings elongate, costa gently arched, apex rounded-obtuse, termen very obliquely rounded; all veins present and separate; light grey, suffusedly mixed with whitish, and strewn throughout with dark fuscous strigulae; costal edge suffused with dark fuscous towards base; a narrow dark fuscous fascia from middle of dorsum, reaching more than half across wing; a cloudy dark fuscous spot in disc at $\frac{3}{4}$: cilia whitish-grey. Hindwings thinly clothed with hair scales, light grey; cilia pale grey, becoming whitish towards tips.

Barberton, Waterval Onder (Janse); from November to January, three specimens. Very like *hormotris*, but smaller, head not ochreous, antennal pectinations much shorter, 7 and 8 of forewings not stalked.

Melasina ostracitis, n. sp.

♂. 16 mm. Head ochreous-brownish, face paler. Palpi moderate, brown, infuscated towards base. Antennal pectinations 2. Thorax ochreous-white. Abdomen light grey, anal tuft ochreous-whitish. Forewings elongate, costa gently arched, apex obtuse, termen obliquely rounded; ochreous-whitish; costal edge blackish at base: cilia ochreous-whitish. Hindwings light grey; cilia ochreous-whitish.

Noordkaap (Jeffery); in January, one specimen.

Melasina animosa, n. sp.

♂. 22 mm. Head yellowish-white. Palpi short, ochreous-whitish. Antennal pectinations 7. Thorax whitish, anterior margin suffused with grey. Abdomen pale whitish-ochreous. Forewings moderate, rather dilated posteriorly, costa moderately arched, apex obtuse, termen rounded, rather oblique; 7 and 8 long-stalked; white, posterior half of costa tinged with ochreous-yellowish; costal edge blackish towards base; stigmata moderately large, black, plical slightly beyond first discal; a black dot in middle of disc between stigmata, and about twenty small irregularly scattered black dots towards margins: cilia yellow-whitish. Hindwings and cilia whitish-ochreous.

Pretoria (Swierstra); in November, one specimen. According to description *stupea* Wall. should be rather similar to this, but has the head ferruginous, dots fuscous, stigmata not mentioned.

Ptisanora, n. g.

Head with appressed hairs; ocelli present; tongue absent. Antennae $\frac{3}{5}$, in ♂ moderately ciliated, basal joint stout, with dense anterior pecten of scales. Labial palpi very short, drooping, densely scaled, somewhat pointed. Maxillary palpi obsolete. Posterior tibiae clothed with long hairs above. Forewings with 2 from angle, 7 to apex, 11 from middle, secondary cell well-defined. Hindwings $\frac{3}{4}$, elongate-ovate, cilia 1; 2–7 separate, nearly parallel.

Allied to *Melasina*.

Ptisanora trivialis, n. sp.

♂. 12-13 mm. Head whitish-ochreous or ochreous-whitish. Palpi whitish. Antennal ciliations 1. Thorax ochreous-whitish, more or less sprinkled or tinged with brownish, especially anteriorly. Abdomen pale greyish-ochreous. Forewings elongate, costa moderately arched, apex obtuse, termen very obliquely rounded; whitish-ochreous, sprinkled with brownish, in one specimen much mixed irregularly with fuscous and dark fuscous: cilia pale whitish-ochreous, sometimes sprinkled with brownish or fuscous towards base, in the dark specimen suffused with greyish towards tips. Hindwings grey; cilia ochreous-whitish or pale whitish-ochreous.

Waterval Onder (Janse); in November, six specimens.

Phthoropoea Wals.

I am not acquainted with the type of Walsingham's genus, but the following species agrees with his generic description; it appears to be allied to *Scardia*. Antennae almost 1, basal joint with pecten.

Phthoropoea vibrata, n. sp.

♂. 13 mm. Head white. Palpi white, second joint infuscated towards base. Thorax white, patagia sprinkled with fuscous. Abdomen whitish. Forewings elongate, costa moderately arched, apex tolerably pointed, termen extremely obliquely rounded; whitish, strigulated with fuscous, strigulae on costa and dorsum more distinct and mixed with dark fuscous: stigmata small, dark fuscous, plical very obliquely before first discal: cilia whitish, with traces of a median line of fuscous points. Hindwings pale grey; cilia whitish.

Barberton (Janse); in December, one specimen.

Chliarostoma n. g.

Head rough-haired; ocelli present; tongue absent. Antennae $\frac{3}{4}$, in ♂ very shortly ciliated, basal joint short, without pecten. Labial palpi moderately long, curved, ascending, second joint with tuft of rough projecting scales towards apex beneath, without bristles, terminal joint shorter than second, loosely scaled, pointed. Maxillary palpi moderately long, several-jointed, folded, filiform. Posterior tibiae clothed with long hairs above. Forewings with 2 from angle, 7 and 8 stalked, 7 to costa, 11 from before middle. Hindwings nearly 1, elongate-ovate, cilia $\frac{4}{5}$; 2–7 separate, tolerably parallel.

Allied to *Scardia*.

Chliarostoma relecta, n. sp.

♂. 14-15 mm. Head and thorax pale yellow-ochreous. Palpi whitish-ochreous, second joint irrorated with dark fuscous except towards apex. Abdomen dark grey. Forewings elongate, rather narrow, costa gently arched, apex obtuse-pointed, termen rounded, rather strongly oblique; light ochreous; costal edge suffusedly dark fuscous from base to near middle; cilia light ochreous. Hindwings dark grey; cilia grey.

Barberton (Janse); in December, two specimens.

Amydria caligata, n. sp.

♂. 15-17 mm. Head, palpi, antennae, and thorax dark fuscous, second joint of palpi with several lateral bristles. Abdomen rather dark fuscous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded; dark fuscous; second discal stigma forming a very obscure darker spot: cilia fuscous mixed with dark fuscous. Hindwings and cilia fuscous.

Waterval Onder (Janse); in November, two specimens.

Dasyses rugosella Staint.

Having identified *hirsutella* Wals., originally described as a *Psoricoptera* and subsequently referred to *Scalidomia*, I find it to be specifically identical with this common Indian species, of which the larva feeds in decayed wood. I note that the antennae of ♂ are longer than in ♀, nearly as long as forewings.

Scardia genitalis, n. sp.

♂. 10-12 mm. Head and palpi pale fulvous-ochreous, tuft of palpi long, terminal joint short, whitish, Antennae $\frac{2}{3}$, ochreous-whitish, simple.

Thorax whitish-ochreous. Abdomen pale grey, anal tuft whitish-ochreous. Forewings elongate, costa moderately arched, apex obtuse, termen very obliquely rounded; all veins separate; whitish-ochreous: cilia concolorous. Hindwings pale greyish; cilia ochreous-whitish.

Pretoria (Swierstra); in November, two specimens.

Plate XII.

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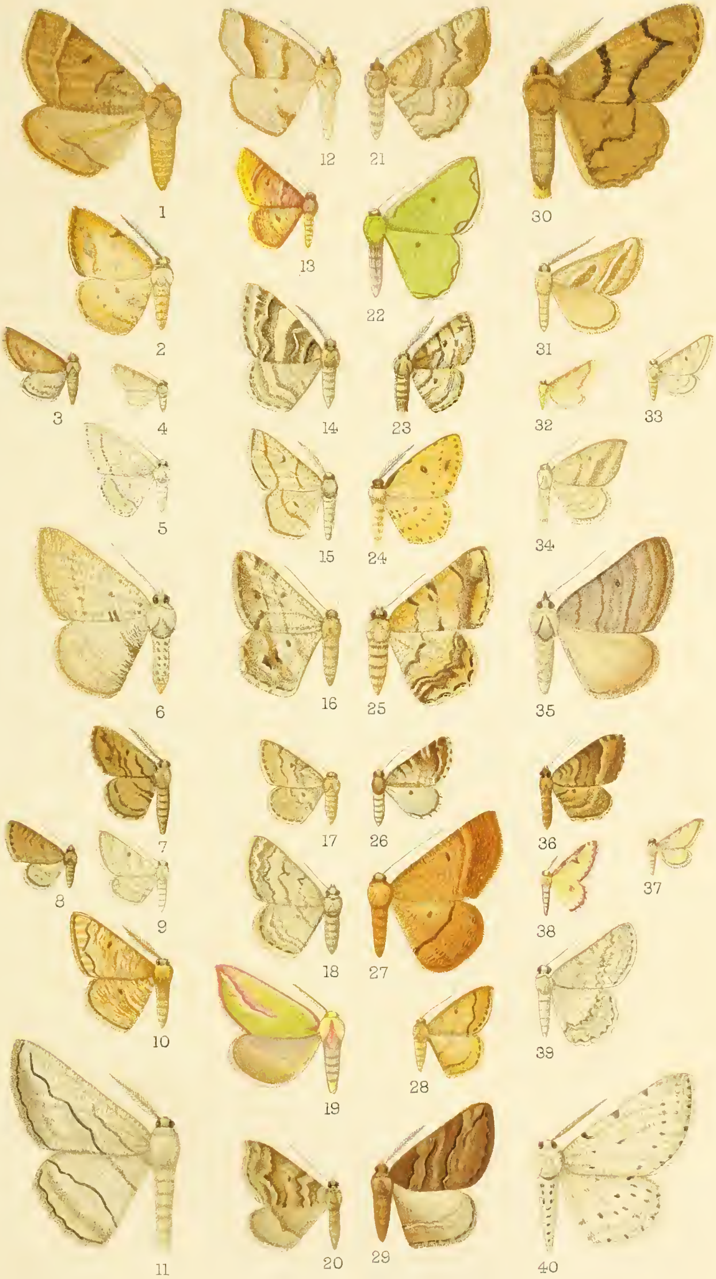

Edith J. Prout ad nat del.

West, Newman chr.

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